JPRS 78973

14 September 1981

Worldwide Report

ENVIRONMENTAL QUALITY

No. 322

FBIS FOREIGN BROADCAST INFORMATION SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Indexes to this report (by keyword, author, personal names, title and series) are available from Bell & Howell, Old Mansfield Road, Wooster, Ohio 44691.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

JPRS 78973

14 September 1981

WORLDWIDE REPORT

ENVIRONMENTAL QUALITY

No. 22

CONTENTS

ASIA

AUSTRALIA

Alcoa Redesigns Smelter To Cut Fluoride Emissions
(Peter Roberts; THE AGE, 3 Aug 81) 1

Briefs

Herbicide Spraying Protest 3

INDIA

World Bank, EEC To Fund Afforestation Project
(THE STATESMAN, 29 Jul 81) 4

Bombay Study Cites Industrial Pollutant Damage
(THE HINDU, 1 Aug 81) 5

Bengal Seeks Steps To Check Farakka Erosion
(PATRIOT, 8 Aug 81) 6

Erosion Termed Worst Foe of Indian Agriculture
(PATRIOT, 13 Aug 81) 7

Briefs

Salinity Research Project 9

NEW ZEALAND

Cabinet To Introduce Clean Air, Noise Abatement Bills
(Karen Brown; EVENING POST, 14 Jul 81) 10

Parliament Debates Major Changes in Mining Bill
(EVENING POST, 17, 22 Jul 81)..................................... 11

Response to Public Concern, by Rae Lamb
Mining Companies Secrecy

Environment Minister Urges Conservation Plus Development
(EVENING POST, 22 Jul 81, PRESS, 14 Jul 81)....................... 13

Backs Environmental Groups
Warns of Endangered Species

Environmental Groups Lose Court Case Against Smelter
(EVENING POST, 15 Jul 81)... 15

Synthetic Fuel Plant Accepts Most Audit Recommendations
(EVENING POST, 28 Jul 81)... 16

Briefs
Aluminum Smelter Challenges 18
New Environmental Group 18
Critic of Environmentalists 18

PEOPLE'S REPUBLIC OF CHINA

Environmental Protection Work During Readjustment Outlined
(HUANJING BAOHU, No 2, 1981)...................................... 20

Level of Environmental Scientific Research Analyzed
(Guo Fang; HUANJING BAOHU, No 2, 1981)............................ 25

Environmental Water Conservancy Problems Discussed
(Shen Ganqin; HUANJING BAOHU, No 2, 1981)......................... 31

Ecological Balance Affected by Loss of Land
(Qu Geping; HUANJING BAOHU, No 2, 1981)........................... 35

Destruction, Rebuilding of Ecological Balance Studied
(Huang Yuyao, Xu Muqi; HUANJING BAOHU, No 2, 1981)................ 41

LATIN AMERICA

TRINIDAD AND TOBAGO

Committee Recommends Zoning Restrictions on Livestock
(TRINIDAD GUARDIAN, 11 Aug 81).................................... 44

VENEZUELA

Insect Used To Preserve Guasare River Ecosystem
(Antonio Reyes; EL NACIONAL, 26 Jul 81)........................... 45

SUB-SAHARAN AFRICA

INTER-AFRICAN AFFAIRS

West African States Cooperate To Counter Coastal Pollution
(Raphael N'Guessan; FRATERNITE MATIN, 24 Jul 81)................ 48

ANGOLA

Gradual Disappearance of Luanda Bay Creates Health Dangers
(Pedro de Almeida; JORNAL DE ANGOLA, 23 Jul 81)................. 51

NIGERIA

Damage, Deaths Reported in Natural Disasters
(NEW NIGERIAN, 5 Aug 81).. 54

Malumfashi Flood, by Aliyu Modibbo
Flood, Drought Relief

Briefs
Afforestation in Kaduna 55

ZIMBABWE

Warden Warns of DDT Contamination
(THE HERALD, 25 Aug 81).. 56

Briefs
DDT Ban Backed 59
Rural Water 59

USSR

Ecology Problems in Pavlodar-Ekibastuz TPK Development Reviewed
(Ye. V. Gvozdev; VESTNIK AKADEMII NAUK KAZAKHSKOY SSR,
Jun 81).. 60

WEST EUROPE

DENMARK

Fjord Threatened as Salt Storage Emptied for Gas Reserves
(Bo Engzell; DAGENS NYHETER, 27 Jul 81)......................... 65

Dumping of Poisonous Medicine Threatens Jutland Coast
(Bo Engzell; DAGENS NYHETER, 29 Jul 81)......................... 69

NORWAY

Oslo Plans New Waste Recycling Facility
(ARBEIDERBLADET, 11 Aug 81).. 73

SWEDEN

Nitrogen From Fertilizers Seen Threat to Baltic
(Lennart Lundegardh; SVENSKA DAGBLADET, 15 Jul 81).............. 75

Product Control Board Sanctions Crop-Dust Tests
(SVENSKA DAGBLADET, 16 Jul 81).................................... 77

Plastic Makers Halt Cadmium Production in Advance of Ban
(Henrik Ekman; SVENSKA DAGBLADET, 31 Jul 81)..................... 79

Briefs

Dioxin Level Not Disturbing 81

ALCOA REDESIGNS SMELTER TO CUT FLUORIDE EMISSIONS

Melbourne THE AGE in English 3 Aug 81 p 6

[Article by Peter Roberts]

[Text] For the second time, Alcoa of Australia has redesigned its proposed Portland smelter to reduce the amount of fluoride pollution

But the new fluoride level--contained in the company's formal application for an air pollution licence--is still twice that achieved by the world's cleanest aluminium smelters in North America.

These smelters were built by the Anaconda company at Mt Holly in South Carolina and by Alumax at Sebree in Kentucky, and are emitting 0.5 kilograms of fluoride for every tonne of aluminium they produce.

When Alcoa first announced its Portland project, an emission level of 1.38 kilograms per tonne was proposed. This was later reduced to 1.2 kilograms per tonne in a supplementary environment effects statement for the project.

Its application to the Environment Protection Authority now asks for an emission limit of 1 kilogram per tonne.

The licence application is available for public scrutiny at the EPA in East Melbourne. The authority has four months in which to make a preliminary determination of the licence to be awarded to Alcoa. The public and the company will then have 45 days to object to the determination.

Alcoa's Portland project manager, Mr Ray Roberts, said yesterday the reductions had been possible because of improvements in technology. He declined to comment on whether one kilogram per tonne was the best the company could achieve, or whether other smelters were less polluting.

"It would be premature for me to comment at this stage," Mr Roberts said. "The EPA will in time come up with its own assessment."

The level proposed by Alcoa means the $465 million first stage of the project would emit 132 tonnes of fluoride to the air each year once it came on stream in mid-1983.

Actual pollution levels in the town of Portland depend on meteorological conditions. High concentrations of fluoride can be toxic to humans, grazing animals and plants.

A project officer with the Australian Conservation Foundation, Mr Andrew Herington, has asked the EPA to reject the Alcoa proposal.

"For many years the EPA has talked about requiring that the best possible technology be used in major projects such as Alcoa at Portland," Mr Herington said. "Now is the time to put that policy into practice."

CSO: 5000/7584

BRIEFS

HERBICIDE SPRAYING PROTEST—Residents in the north of Victoria have forced the State Forests Commission to postpone the spraying of pine plantations with the herbicide 2,4,5-T because of their threat to seek a Supreme Court injunction. The herbicide has caused concern because it contains the same deadly chemical as the defoliant, Agent Orange, used by the United States forces in South Vietnam. The commission wanted to use 2,4,5-T to clear undergrowth but had made an agreement with tobacco farmers in the area around Bright, 210km northeast of Melbourne, not to carry out the spraying after August 1. The local residents became concerned earlier this week when they received news of the plan to use a helicopter to spray the plantations. Many pregnant women said they would move away while spraying was in progress. Then on Wednesday the Wandiligong Preservation Society said it would seek a Supreme Court injunction on the grounds that the herbicide was a health risk. The court action was held up when the commission rang the society's solicitors to say that the spraying would be postponed. The commission says the 2,4,5-T complies with the standard of the National Health and Medical Research Council. It said that in the Bright area the spray was to be used 2-1/2 km away from the nearest house. However, the residents are now planning legal challenges to the spraying proposed for next year. [Excerpts] [Canberra THE AUSTRALIAN in English 31 Jul 81 p 9]

CSO: 5000/7584

WORLD BANK, EEC TO FUND AFFORESTATION PROJECT

Calcutta THE STATESMAN in English 29 Jul 81 p 12

[Text] The World Bank and the European Economic Community have agreed to provide funds for long-term afforestation and soil conservation projects in West Bengal. The two projects are estimated to cost Rs 36 crores.

Mr Parimal Mitra, State Forest Minister, said in Calcutta on Tuesday that a delegation comprising officials of the West Bengal Government and the Centre would hold discussions with the representatives of the World Bank on August 3 in Washington for signing an agreement.

The project, spread over six years from 1981-82, will cost Rs 34 crores. The State Government's share of the project cost is Rs 18.38 crores and the rest will be provided by the World Bank.

The project envisages bringing 93,000 hectares under social forestry till 19[illegible] Trees will be planted on private land, in degraded forests and along streets.

The EEC aided pilot project will cost Rs 2 crores and lay emphasis on both afforestation and soil conservation in the catchments of the Keleghai river in Midnapore district and the Mayurakshi river in Ribhum district. The project is divided into two schemes. For each of the schemes Rs 1 crore has been earmarked. The schemes will be implemented in five years from 1981-82.

The Keleghai scheme covers, a 1,078 square kilometre area in the upper and middle catchment of the river. Soil conservation and plantation of trees will be undertaken simultaneously. The Mayurakshi scheme will benefit 722 square kilometres in the catchment of the river. Seedlings of eucalyptus, neem, mahua and cashew nut trees will be planted.

Mr Mitra said that the EEC would give Rs 1 crore as grant for the project and the State Rs 1 crore. He said that although the EEC would contribute 50% of the project cost as grant, the Centre would retain 20% of the 50%. Since the amount involved was a grant, the entire amount should come to the project, he added.

CSO: 5000/7060

BOMBAY STUDY CITES INDUSTRIAL POLLUTANT DAMAGE

Madras THE HINDU in English 1 Aug 81 p 9

[Text]

NEW DELHI, July 31.

Industrial air pollutants affect plants, particularly mango trees, considerably.

According to a University Grants Commission sponsored study conducted in Bombay for three years, the damage ranges from 20 to 30 per cent during early post-monsoon period to about 100 per cent behind a chemical factory situated in front of a hill range during summer.

The study, conducted by Dr. S. B. Chaphekar, Associate Professor of Ecology, Department of Botany, Institute of Science, Bombay, and two others, revealed that mango trees were consistently affected by the quality of air, irrespective of the type of pollutants, i.e. auto-exhausts on road-sides or effluents from chemical factories or petroleum refineries.

According to the study, industries in greater Bombay region throw about 1,800 tonnes of pollutants per day into the atmosphere. Of these, 38.4 per cent is carbon monoxide, 34.4 per cent sulphur dioxide, and the rest is made up of particulates, oxides of nitrogen and others.

On human beings, "the air pollutants" cause mainly respiratory irritation and in extreme cases serious lung congestion leading to death. Hydrogen fluoride causes respiratory diseases, fluorosis, teeth mottling and irritation. "Reduced visibility is also associated with air pollution".

Dr Chaphekar and his associate investigators, Dr. D. B. Boralkar and Mr. R. P. Shetye, also conducted their research on other plants including thespesia (Bhendi), erythrina (Pangara) and polyalthia [illegible].

The maximum damage estimated on leaves of thespesia in and around Bombay was 20 per cent. Compared to mango, this plant appeared to be more resistant, with less than five per cent damage at most of the spots.

At one spot near a refinery, the damage, though small, was present throughout the year.

Amongst the plant species used for estimating the damage to foliage, only mango was consistently reliable, the study says. It showed high foliar damage in industrially polluted areas as well as along road-sides.

Hence it is concluded that only mango trees can prove a reliable and consistent air pollution monitoring instrument.—PTI.

CSO: 5000/7061

BENGAL SEEKS STEPS TO CHECK FARAKKA EROSION

New Delhi PATRIOT in English 8 Aug 81 p 4

[Text] WEST Bengal Minister for Judicial and Legislative Affairs Hashim Abdul Halim has strongly urged the Centre to take immediate remedial measures to check the massive erosion in the Farakka barrage region that would seriously threaten the two districts of Malda and Murshidabad in the State.

Mr Halim, who represented Chief Minister Jyoti Basu at a meeting of the Ganga Flood Control Board in the Capital on Friday, said however that since the completion of the Farakka barrage in 1972 there has been substantial erosion in the left bank of upstream part and erosion in the downstream part has assumed frightening proportions.

To corroborate his contention, he said in 1978 over 300 hectares of land in the upstream part and 2,300 hectares in the downstream part had been lost to the Ganga. The police station in Dhulian and the railway line there had been washed away. The National Highway 34 was also threatened.

In 1978, the Pritam Singh Committee set up to examine the question of erosion in the Farakka barrage region had proposed remedial measures amounting to Rs. 38.73 crores, but practically nothing had been done by the Centre to control erosion. The Board was dragging its feet and it was prepared to spend only Rs. 27 crores for the purpose.

He said it was his distinct impression that the Centre was trying to evade its responsibility on the issue. The Union Government was arguing that in this case the cost-benefit ratio should be taken into consideration. But, Mr Halim's counter-argument was that since the area was in the proximity of an international boundary and it was densely populated with a very fertile soil, the cost-benefit ratio should not be taken into consideration in this case.

The loss of land and homesteads due to erosion with the simultaneous accruing of land on the Bangladesh side of the border was creating law and order problems in the two districts, he declared.

The Board has requested the State Government to furnish some additional information and the details would be submitted within a month, Mr Halim added.

CSO: 5000/7063

EROSION TERMED WORST FOE OF INDIAN AGRICULTURE

New Delhi PATRIOT in English 13 Aug 81 p 2

[Text] IT has often been claimed by the experts that India is self-sufficient in agricultural production and has a bright future in the field. The Government has also claimed at various times that self-sufficiency has been achieved and the farm produce is often exported, earning large amounts of foreign exchange. But a thorough study and scrutiny of these claims would establish that much remains to be done.

It is true that the peasants and the Government are doing their best, but Nature and the soil have still much to offer. The main hindrance to agricultural production today is not so much lack of fertilisers or irrigation facilities as soil erosion, which has, for billions of years, deprived man of his reward. Day in and day out he toils on the land but earns little. Every year the country suffers because of soil erosion; production on farms goes on decreasing; the area of cultivable land gets reduced; and finally, there are famines, drought and pestilence.

Soil erosion turns alluvial land into unfertile and unproductive desert, or saline, alkaline and equally unproductive tracts. It is estimated that as much as one-third of the total cultivable area in the country is lying fallow and a quarter of the non-agricultural land is being wasted these days because of soil erosion. Three-fifths of the agricultural land is also water-logged and has become saline. According to one estimate, 266 million hectares of land needs dire attention, because it has become unproductive. This is a frightening picture.

Soil erosion has done extensive damage in Uttar Pradesh and Rajasthan, and in Punjab too it has choked irrigation courses. Valuable fertile land has been turned into worthless gullies carved out of the soft mud by the Jamuna, Chambal and other rivers. Rampant erosion has damaged a vast area of land in Madhya Pradesh, Rajasthan and Gujarat.

In the Yamuna-Chambal basin, the tangle of wild and sterile ravines have become the hideouts of robbers. In other parts of northern India too, the deep alluvial and fertile soil has been converted into useless ravines. In West Bengal, Bihar and Maharashtra, much havoc has been caused by the rivers. Wind has also caused enormous damage in Punjab, as also in Jodhpur, Bikaner and many other districts of Rajasthan. Wind breaks the trees, hedges and grass. The greenery disappears, and is replaced by dust.

Close observation, detection and precautions are needed to stop soil erosion. Denudation or the cutting away of soil particles in the land by natural agencies like rain, running water, the wind and sea waves are responsible for this phenomenon.

If the rain forcefully strikes the surface and the showers are concentrated, the soil can be eroded quickly, loosening the particles and forming deep ravines. On steeper slopes the soil is quickly washed away. Light and open soils lose more silt, whereas black and wet soil do not wash away easily. Soft shale and sandstone erode more rapidly than limestone and granite. (Erosion in the Shivalik region is more pronounced than in Delhi.) If the ground is bare of vegetation, and does not absorb rain water, soil erosion occurs quickly.

Sheet erosion is where an entire layer of soil is removed from the hill slopes or from those uncultivated lands where grazing or fire has occurred, or where trees have been indiscriminately cut and burned. In this case finger-shaped grooves appear over the entire area. In other cases, rain water forms small rivulets, washing away the soil from gullies. This then goes on extending over the area.

Primarily, river systems cut down into elevated plateaus and carve out intricate patterns of gullies. In India, floods are a common phenomenon every year. Inundated rivers undercut the banks and erode the beds. The force of the water also carves into the banks and results in erosion.

The wind also carries away the soil in short bounces. Small particles of soil are carried long distances, suspended in the air. Ultimately, when they become too heavy, these particles are scattered along the surface. Experts often say that Nature builds one inch of topsoil in about two thousand years and man frequently destroys it overnight by indiscriminate use. Floods, failure of rains, diseases, wars, famine and change of natural drainage system too affect the soil badly.

Erosion by sea waves is also a major problem and has recently assumed rather alarming problems in some parts of the coast in Kerala and Maharashtra.

Deforestation is the greatest cause of soil erosion. Man may cut trees for timber and fuel supply resulting in absence of seepage and storage of water in the soil. The structure of soil cannot sustain water. Instead, the water loosens the soil and transports it. This also contributes to floods. In contrast, in the case of natural forests, tree roots go deep into the soil and penetrate into the cracks. The intensity of rain is broken by the tree leaves and the carpet of vegetation soaks the water like a sponge, which later on emerges as a stream somewhere else. The absorption of rain reduces flood violence.

Plants, even grass, also protect the soil, but overgrazing of land destroys it. When the rain strikes such a tract of land directly, the soil pores are clogged with mud and the run-off of the water is enhanced. It leads to the deterioration of the botanical composition of the soil. Weeds and bare ground increase.

In the case of shifting cultivation, a piece of land is selected in a forest. The trees are cut and the field is cultivated. This process continues for years and every year the fertility of the soil goes on diminishing. Such a phenomenon is common in the Himalayan foothills, Assam and Madhya Pradesh. Ploughing on the unstable slopes has also resulted in soil erosion. On steeper slopes, the cultivation yields less produce every year.

Soil erosion is the greatest menace facing our agriculture. It reduces the life expectancy of irrigation projects. Alternative sites are not easily available because there is high rate of sedimentation. This not only results in loss of irrigation and power potential, but it also causes extensive floods every year. Water resources also dry up.

This degeneration of land has to be stopped at all costs. There is need for the early setting up of a special Central agency to detect and monitor such degeneration and coordinate efforts to tackle it. All damage due to deforestation, water-logging and floods should be reported to this agency.

Diversion of good agricultural land for urban and industrial uses must be stopped. The land with inferior or unproductive soil could be used for such purposes. Deforestation also must be stopped. In fact, more forests need to be grown, under programmes such as the one inaugurated by the Prime Minister, Mrs Indira Gandhi, in Rajarthan.

Afforestation of the top slopes and catchment areas has been recommended to halt soil erosion. Grass should be grown on the upper slopes too. Terracing system of agriculture should be adopted. Strip cropping, contour cultivation and protective farming is advised. The land should absorb all the rain water. This will reduce soil erosion. Trees can help in this objective. Afforestation of the catchment areas of the rivers will increase the life of dams and reservoirs, thus obviating floods and soil erosion.

Flood control is a must. As part of this, the level of low-lying villages should be raised and small dams erected around them. Diversion ditches are also recommended.

Soil-binding crops like grams, bajra, jowar, peas and fodder can reduce soil erosion. Tobacco, cotton, maize, 'arhar' and potatoes should not be grown on the land where soil has been eroded.

Grazing may be allowed in forests by rotation after a gap of five years or so. Goats cause much damage.

In short, soil erosion must be stopped at all costs. It is a colossal job. While the Sixth Five Year Plan has made substantial provision for this and effective measures are being taken already, the problem cannot be solved without the active participation of the masses. Let us all cooperate in this mission which is essential for our economy.—PTI Feature.

CSO: 5000/7064

BRIEFS

SALINITY RESEARCH PROJECT--Bhavnagar, Aug 6 (PTI)--The International Foundation for Science (Sweden) has sanctioned 10 000 US dollars (Rs 77,000) for the first phase of the research project on reclamation of saline soils, submitted by Dr A J Joshi of the Sir P P Institute of Science affiliated to the Bhavnagar University. The principal of the institute Dr AR Parekh told newsmen here yesterday that under the programme Dr Joshi would study the salinity problems of saline soils in Gujarat and Western India and would examine possibilities of introducing plants having economic potentiality on such soils. Dr Joshi was the seventh Indian to receive the grant for such research projects from (IFS) one of the largest scientific foundation in the world having its member organisations in 53 countries according to Dr Parekh. [Text] [New Delhi PATRIOT in English 7 Aug 81 p 5]

CSO: 5000/7062

CABINET TO INTRODUCE CLEAN AIR, NOISE ABATEMENT BILLS

Wellington EVENING POST in English 14 Jul 81 p 32

[Article by Karen Brown]

[Text] Legislation leaving the power to control neighbourhood noise largely with local authorities rather than the police is to be introduced this session.

Cabinet yesterday considered papers concerning a noise bill and a clean air amendment bill which are both planned for introduction this session, a spokesman from the office of the Minister of Health, Mr Gair said today.

The Government first indicated it would introduce noise legislation this year when the Labour Opposition introduced a neighbourhood noise control bill last month.

Then Mr Gair said that the Government's bill — likely to supersede the Labour one — would leave power to control neighbourhood noise with local authorities where it rests at present.

The Labour bill introduced by the shadow cabinet minister of health, Dr Michael Bassett, proposed that much wider powers be given to police to cope with the problem, which, it was said, local government could not handle.

Mr Gair's spokesman said today that the noise bill was in its final drafting stages and would be introduced into Parliament this session for referral to the health and welfare select committee in conjunction with the Bassett bill.

It would keep the power for noise control enforcement in the local body area.

And, the clean air amendment bill also for introduction was "in its initial (drafting) stages" and would strengthen the Clean Air Act.

CSO: 5000/9040

PARLIAMENT DEBATES MAJOR CHANGES IN MINING BILL

Response to Public Concern

Wellington EVENING POST in English 17 Jul 81 p 4

[Article by Rae Lamb]

[Text] A government bill making major changes to mining legislation and incorporating environmental considerations was subjected to close scrutiny when it was introduced in Parliament yesterday.

The Minister of Energy, Mr Birch, was questioned at length by Labour MPs about various clauses in the 21-page bill, and the Social Credit MP, Mr Garry Knapp, labelled the bill as inadequate.

Sen as the Government's response to public concern at the adverse environmental effects of mining, particularly in the Coromandel area, this bill eliminates the automatic right of the holder of a prospecting licence to obtain a mining licence.

The Mining Amendment Bill also gives greater opportunity for local and public participation in the assessment of the effects of mining.

The bill, which is to be effective from October 1, names the Planning Tribunal rather than the minister as the final arbiter on objections related to the granting of mining privileges.

It provides for an environmental assessment to accompany applications for mining or prospecting licences, and adds a new condition to be attached to prospecting licences. The condition that all necessary steps be taken to prevent damage to areas of scientific, wildlife, fishing or historic interest.

Under this bill the minister must have regard to, among other things, environmental and social factors when granting a mining licence.

It also enables the Planning Tribunal to call the Commissioner for the Environment to give evidence in respect of the environmental impact reports.

Mr Birch told Parliament it had been necessary in this bill to take a "middle course" bearing in mind the importance of maintaining a viable mining industry in New Zealand.

Applications that had already been made for mining licences would not be affected by this bill. There were about 24 such applications.

Mr Birch said this bill tied mining legislation more closely to the provisions of the Town and Country Planning Act.

Labour's spokesman on energy, Mr Tizard, queried the time-frame and approach of the bill. Other Labour MPs questioned the role of the Commission for the Environment, the clauses relating to bonds and rental, the relationship between this bill and the Town and Country Planning Act, and the definitions of prospecting and mining.

Pressure

Mr Knapp said the bill was the result of tremendous pressure by people who saw the inadequacies of the current legislation as protection against foreign interests wanting to "tear the heart" out of New Zealand's wealth of mineral resources.

He said the definition of "prospecting" in the bill was not tight enough and it could still allow de facto mining.

The Minister for the Environment, Dr Ian Shearer, added his voice to those of Government MPs who spoke in support of the bill.

Replying to a question raised by Labour's shadow minister for the environment, Mr Moore, Dr Shearer said the Commission for the Environment had been given the right to speak on matters contained in the bill with an independent voice.

The bill was referred to Parliament's commerce and energy select committee for consideration.

Mining Companies Secrecy

Wellington EVENING POST in English 22 Jul 81 p 6

[Text] The habits of secrecy of mining companies were deeply ingrained and there were more rumours about their activities than facts, the Commission for the Environment said in its annual report.

The report, tabled in Parliament yesterday, criticised the actions of one or two mining companies which have refused to give out information about projects. One company gave notification of a proposal on Christmas Eve, 1980, when the 21 days allowed for objections coincided with annual holidays.

The report describes this as an unfortunate episode which, while an isolated action, typified the attitude of mining interests.

"Overseas firms need to know in particular that in New Zealand it is expected that the communities affected will be treated with sensitivity and given something more substantial in terms of facts than a burst of public relations."

The commission defended its role as an agency which carried out independent audits of environmental reports and at the same time advised the Minister for the Environment.

It admitted that this was an unusual role, but pointed out that while ministerial accountability covered policy matters, advice on policy was not something for which a department should be openly accountable.

The report also considered the question of the danger to wild and scenic rivers from hydro-electric projects. It said that the final shape of legislation designed to protect these rivers will be a measure of New Zealand's sensitivity to key environmental issues.

CSO: 5000/9040

ENVIRONMENT MINISTER URGES CONSERVATION PLUS DEVELOPMENT

Backs Environmental Groups

Wellington EVENING POST in English 22 Jul 81 p 28

[Text]

THE MINISTER for the Environment, Dr Ian Shearer, has suggested that environmental groups should be paid for the advice they offer when major development projects are proposed.

In an address to a meeting of the Royal New Zealand Forest and Bird Protection Society in Wellington last night he said the big increase in major projects in recent years had seen environmental groups voluntarily taking on extensive research, litigation and publicity work.

This had all been done in the public interest and at great cost to themselves in terms of money, time and energy.

"Clearly the amount of good advice I receive will be greatly influenced by the degree of financial stability of the organisations supplying that advice."

Funding

Dr Shearer said alternative methods of funding could include payment for professional and technical expertise on a contract basis, payment for administration, or funding through the proposed 2 percent conservation levy on the capital cost of all major new industrial projects.

On the conservation levy, he said environmental damage was a cost which industry imposed on the community in the long run. The community, therefore, had a right to expect industry to bear its share of these costs without in any way exonerating it from normal environmental safeguards.

"There is no need for New Zealand to accept the same environmental costs of industrialisation that other countries accepted — largely in ignorance — in earlier decades."

He said there could be no sustainable growth in this country until conservation was fully integrated with development. The single-track push towards development was undercutting the base of this development.

"New Zealand's primary production depends on protecting soils which are often infertile and unstable . . . three quarters of our land area shows signs of erosion.

"Just as alarming is the threat to the coastal wetlands that help underpin our expanding fishing industry.

"Worrying also is the fact that over 500 of our plant, bird and animal species are now in danger of extinction and that natural and wild areas are in danger of being lost to hydro and geothermal development."

Quoting from the recently released proposal for a New Zealand conservation strategy, he said: "Unless patterns of development that also conserve resources are widely adopted, it will become impossible to meet the needs of today without prejudicing the achievements of tomorrow.

"Past failures to come to grips with this philosophy have kept conservationists extremely active in recent years. It has been more an exercise designed to rectify earlier mistakes than to ensure a conservation of resources."

'Enough'

Dr Shearer said it was time to say "enough" when resources were depleted to such an extent that only desperate measures had to be applied.

He said there was a critical need for conservation to be integrated with development as the country moved into major expansions of agricultural, forestry, fishing, manufacturing and energy industries.

Environmental considerations had to be integrated into the earliest stages of the planning process of big projects and not simply tacked on as an afterthought after the main siting, engineering and financial decisions had been made.

Dr Shearer also defended the Commission for the Environment which has recently come under attack for commenting on the social and economic impacts of projects.

He said this controversy was a healthy sign and meant the commission was doing its job.

"There are a number of large projects, some of which involve new processes for New Zealand, and some of which are contentious. It is inevitable that the environmental evaluation of such projects would bring out fundamental differences relating to resource use," said Dr Shearer.

Warns of Endangered Species

Christchurch PRESS in English 14 Jul 81 p 2

[Text] PA Wellington

More than 300 New Zealand plant, bird, and animal species were in danger of extinction, according to the Minister for the Environment (Dr Shearer).

Some species — including rock lobsters in Tasman Bay, trevally in the Bay of Plenty, and snapper in the Hauraki Gulf — were being over-exploited, said Dr Shearer yesterday at the launching of the Nature Conservation Council's proposal for a New Zealand conservation strategy.

The proposal was described by the Minister as an attempt to find middle ground in the conflict between development and conservation. He welcomed its plan for a Protected Habitats and Species Bill, modelled on the American Endangered Species Act of 1973.

Dr Shearer noted that less than 10 per cent of New Zealand's original freshwater wetlands remained free from development.

He also said New Zealand was now developing air pollution problems that were beginning to match, in cities such as Auckland and Christchurch, those in some of the world's main industrialised nations.

"In Christchurch, for example, motor-vehicle exhausts have caused lead concentrations in rainwater that are exceeded only in some of the bigger American cities."

Dr Shearer said the search for mutual agreement between development and conservation interests would require changed attitudes on both sides.

This was necessary to get away from the dangers of "over-utilisation of resources" or a "total lack of development."

The Minister of Lands (Mr V. S. Young) also spoke at the function about "seeking the balance" between views. "There is no solution to be found in a regular polarisation of views," he said.

It was a short-sighted person who read through the night about the extravagances of hydro-electric schemes, said Mr Young. "There is also a degree of thoughtlessness that wings people around the world to never-ending conferences concerned with the exploitation of fossil fuels."

With considerable economic growth and use of resources just around the corner, it was appropriate that the strategy should be discussed. "We need rational and unemotive debate on the development issues New Zealand is now considering," Mr Young said.

The strategy followed the world conservation strategy launched in March. This one was a "New Zealand document designed to promote New Zealand solutions for New Zealand problems for the benefit of present and future New Zealanders."

The chairman of the Nature Conservation Council (Dr Carolyn Burns) chaired the meeting. She said that the strategy was a proposal. Public submissions would be accepted up to August 31.

The strategy and a review of the public submissions would be presented to the general assembly of the International Union for the Conservation of Nature and Natural Resources in Christchurch in October.

After the general assembly, the proposed strategy, the review of submissions and a report of assembly discussion will be forwarded to the Minister of Lands for the Government's consideration.

CSO: 5000/9040

ENVIRONMENTAL GROUPS LOSE COURT CASE AGAINST SMELTER

Wellington EVENING POST in English 15 Jul 81 p 4

[Text]

THE Government's decision to place the Aramoana aluminium smelter proposal on the fast track of the National Development Act was not invalid, the Court of Appeal has held.

The court today unanimously dismissed two applications for a review of the Executive Council's decision last April to use the fast track procedures of the Natural Development Act to approve establishment of a smelter by South Pacific Aluminium Limited.

The first application was by the Coalition for National Economic and Environmental Development in New Zealand and Mr Gary John Holden, a property owner at Aramoana.

The second was by the Environmental Defence Society and the Royal Forest and Bird Protection Society of New Zealand.

In the first application separate judgments were delivered by each member of the court, Mr Justice Cooke, Mr Justice Richardson and Mr Justice McMullin.

Mr Justice Cooke said there was no evidence of fraudulent misrepresentation as alleged. There was nothing in South Pacific Aluminium's application to suggest the company did not have an honest belief as to the benefits of the smelter.

Controversy

The whole proposal was a controversial one on which strong opinions were entertained on both sides. But to allege fraud was to go too far, he said.

As regards natural justice, the judge said he accepted that some aspects of the National Development Act would in practice cut down opportunities for property owners to object. But streamlining procedures were the very purpose of the Act.

Rejected

Mr Justice Cooke also rejected allegations of predetermination on the part of the Government.

"It is right to add that in my view, although some of the grounds in the statement of claim were wholly untenable, the economic and scientific evidence filed by the plaintiffs and uncontradicted by any evidence filed by the respondents was such as to make it reasonable for the plaintiffs to bring this case," he added.

In the second application a single judgment was delivered on behalf of the court by Mr Justice Cooke.

The Government action had not been shown to have been unlawful, the judgement said.

CSO: 5000/9040

SYNTHETIC FUEL PLANT ACCEPTS MOST AUDIT RECOMMENDATIONS

Wellington EVENING POST in English 28 Jul 81 p 10

[Text]

NEW PLYMOUTH, July 27 (PA). — Most of the Commission for the Environment's recommendations on the proposed Motunui synthetic petrol plant are acceptable to the New Zealand Synthetic Fuels Corporation.

Dr Colin Maiden, chairman of the corporation's joint executive committee, said this in a statement released in New Plymouth to meet the commission's request that the corporation make a public statement before the Planning Tribunal hearing on recommendations in the environmental impact report audit.

Of the 41 recommendations in the audit, 23 were directed at the corporation and had been the subject of further clarification and discussion with the Commissioner for the Environment, Mr Ken Piddington, Dr Maiden said.

Noise levels

The corporation had given the recommendations careful consideration and, subject to some reservations and the need for further clarification on the practicability of a number of them, most of the audit recommendations addressed to the corporation were acceptable.

The corporation did not fully accept the commission's recommendations on noise standards.

Dr Maiden said the corporation had undertaken a major review of noise abatement measures and had concluded the noise levels predicted in the environmental impact report could, at considerable cost, be further reduced.

"The commission's recommended 45dba night-time standard has been accepted as a design goal for the plant, but in view of the technical complexity and costs of further noise abatement measures it was considered essential by the plant's designers to have some reasonable flexibility in attaining this goal."

Liquid effluent disposal would be the subject of recommendations by the Planning Tribunal following consideration of the corporation's water right application to discharge from a marine outfall adjacent to the plant site.

In view of this, the corporation could not accept the commission's recommendation that the plant effluent goes to Waitara.

Dr Maiden confirmed details of environmental protection measures which would be incorporated in final plans for the proposed plant.

These measures were the outcome of the corporation's ongoing environmental investigations as well as discussions with Motunui residents, Clifton County Council, Taranaki catchment commission and local government and statutory authorities, including the Commission for the Environment.

He reiterated the environmental impact report, published in February, was only one point in a continuing process of environmental investigation.

Evidence

Since February, extensive work had been carried out in preparing detailed evidence, which would be presented at the tribunal hearing, due to begin in New Plymouth on Tuesday next week.

Copies of most of this evidence had been circulated to all other parties to the hearing.

Dr Maiden hoped the expert evidence now available would allay any remaining fears that the plant would have unacceptable impacts on the environment.

Since publication of the audit in June, the corporation's environmental investigations and discussions with statutory authorities had addressed many of the matters raised by the commission in considerably more detail than was possible in the corporation's environmental impact report.

In a number of areas, the commission's recommendations simply duplicated, or had been superceded by, the requirements likely to be requested by statutory authorities reporting to the planning tribunal, he said.

Monitoring

For example, the commission's recommendations on environmental monitoring had since been the subject of detailed discussions with the Clifton County Council, Taranaki Catchment Commission and the Health Department.

Specific responses by the corporation to the commission's recommendations include:

- The general principle of environmental monitoring, addressed by at least five of the commission's recommendations, was accepted, but detailed obligations were yet to be determined.
- The corporation has agreed in principle to the demarcation of a coastal reserve on the northern boundary of the plant site. The precise location, size and legal status of such a reserve

would be a matter for further discussion with Clifton County Council and the Department of Lands and Survey.

- The corporation has agreed to protect historic and archaeological sites identified by the Historic Places Trust. These will be fenced before construction and, after construction, will be generally accessible to the local Maori people or interested members of the public. The corporation will have further discussions with the Historic Places Trust over the funding of investigations on the site prior to or during the construction period.
- It is willing to co-operate with any local or regional government group which may be established to co-ordinate research projects into the social impacts of petrochemical plants in the region.
- The corporation will continue discussions with the Fire Services Commission to finalise fire protection measures. These discussions will include establishing "hot fire" training areas.
- Transportation of lead compounds to the plant is no longer an issue because the Government has decided to ship synthetic petrol as a blendstock to the Marsden Point refinery.
- Drift eliminators are already incorporated in the plant cooling tower design to ensure that any drift falling off the site will not have adverse environmental effects.
- The corporation will landscape the plant site, incorporating suggestions outlined in the commission's recommendations.

CSO: 5000/9040

BRIEFS

ALUMINUM SMELTER CHALLENGES--Auckland, July 17 (PA)--The Environmental Defence Society believes it has established an important principle in its litigation against the government placing of the Aramoana smelter project on the "fast track" planning procedure. Although the Court of Appeal overruled the society objections to the decision, the society says it has shown that the legality of cabinet decisions can be challenged. "It is a significant move forward in recognising that public interests can challenge the executive," said the executive officer of the society, Mr Gary Taylor. Mr Taylor said the society would decide in the next two weeks whether to make submissions on the smelter to the Commission for the Environment and the Planning Tribunal. [Text] [Wellington THE EVENING POST in English 20 Jul 81 p 23] Dunedin, Today (PA)--The anti-smelter organisation Creednz has filed a second legal action in the High Court at Dunedin to try to stop South Pacific Aluminium Ltd from proceeding with the smelter at Aramoana. The Coalition for Rational Economic and Environmental Development in New Zealand is seeking a declaration that the streets and service lane in Aramoana village are public, and have been so dedicated at common law. It also seeks an injunction to restrain the Otago Harbour Board or the aluminium consortium from doing any act which prevents public right of passage over the streets. [Text] [Wellington THE EVENING POST in English 24 Jul 81 p 6]

NEW ENVIRONMENTAL GROUP--Whangarei--The newest environmental watchdog in the North is the Northland Alliance for Responsible Development. An informal group began work about three months ago, but on Friday night the group held its inaugural meeting as an incorporated society. About 30 people attended the meeting which was addressed by the executive director of the Environmental Defence Society, Mr Gary Taylor. The president of the alliance, Mr Derek Keene, said it would look at such issues as mining, maritime and regional planning, horticulture, the lead content in petrol and development such as the forestry port at Marsden Pt. The group has already made a submission on the proposed port model which, it says, should include water-quality tests. Mr Keene said the alliance could also be involved in the regional planning scheme which will be released by the united council this week. [Text] [Auckland THE NEW ZEALAND HERALD in English 21 Jul 81 p 8]

CRITIC OF ENVIRONMENTALISTS--Rotorua--Plans to prevent development on some scenic rivers are not looked at favourably by the chairman of the Rotorua Area Electricity Authority, Mr H. A. Mills. "I cannot but view with concern the move afoot to designate many waterways as wild rivers, thereby effectively removing them . . . as potential producers of hydro-electric power," Mr Mills said in his annual report. "Before any such restriction becomes law, individual river proposals should be strictly and thoroughly scrutinised and elements of emotionalism (and sometimes sectional selfishness) should be kept in proportion." Mr Mills said he respected the sincerity of environmentalists and the good they had done over the years but rigid attitudes sometimes did their cause more harm than good. "An adequate supply of hydro-electricity must still remain a major contribution towards the solution of New Zealand's energy problems of the future. "It is either that or think nuclear and our environmentalists cannot keep their cake and still satisfy their everyday appetites that go with modern living." [Excerpt] [Auckland THE NEW ZEALAND HERALD in English 21 Jul 81 p 2]

CSO: 5000/9041

PEOPLE'S REPUBLIC OF CHINA

ENVIRONMENTAL PROTECTION WORK DURING READJUSTMENT OUTLINED

Beijing HUANJING BAOHU [ENVIRONMENTAL PROTECTION] in Chinese No 2, 1981 pp 1-3

[Article by special commentator: "Environmental Protection Must Progress During Readjustment"]

[Text] Recently, the State Council issued a "decision concerning the strengthening of environmental protection work during the period of readjustment of the national economy." This fully shows the emphasis the party and the government have placed on environmental protection work. Readjustment of the national economy is the central task of the whole nation at present. Environmental protection work must insist on implementing the policy of readjustment and progress during readjustment.

For a long time, because of the lack of understanding of environmental problems and the leftist mistakes in economic work, an imbalance was created between the buildup of production and environmental protection, and this has become an outstanding problem in the development of the national economy. Therefore, during the period of readjustment, conscientiously implementing the State Council's "decision," truly including environmental protection work in the road of readjustment of the national economy, and correctly solving the relationship between economic readjustment and environmental protection are the major tasks facing the environmental protection front.

At present, the actual problem we face is that the state's finances are encountering difficulties, and it is not possible to allocate a lot of capital to manage and control pollution and solve the environmental problem. But viewed from another direction, the various policies and measures of readjustment of the national economy all include a large content of environmental protection; they are beneficial to controlling pollution and protecting the environment. Starting out from this basic situation, the general guiding ideology in environmental protection work during the period of readjustment is to do what one is capable of, establish environmental protection work on the basis of less expenditure and more work, and take an active attitude so that environmental pollution and environmental destruction can be controlled in some important ways through readjustment, and some outstanding problems of pollution can be solved to improve our nation's environmental conditions.

In the readjustment of the national economy, can we lessen the damage from pollution by a greater degree without spending money or spending little money? Looking at the experience of many regions, we believe it is possible. The key is to include environmental protection in the readjustment of the national economy, plan it uniformly, and combine it with readjustment in order to reduce pollution and improve the environment.

First, environmental protection must be combined with reduction of the scale of capital construction in order to control the development of new polluting sources. The keystone of the readjustment of the national economy is to solve the problem of an overly long battlefront in capital construction. During the course of reducing the scale of capital construction, environmental protection departments must actively participate in the cleanup work of ongoing capital construction projects. They should make suggestions concerning readjustment based on rational distribution and environmental effects to stop those construction projects that are not rationally planned, that seriously pollute the environment and that do not have effective control measures. Feasibility studies of large and medium-size construction projects that are newly built or expansion projects must be intensified and the reporting and approval system of the "environmental effects report" must be stricIty implemented, effective systems and methods of control must be established, and the key measure of "three simultaneous efforts" must be grasped well. At the same time, management of the construction of small enterprises, and commune and brigade enterprises, street enterprises, joint agricultural, industrial and commercial enterprises must be strengthened. Effective policies and measures must be taken to actively encourage the development of nonpolluting professions that serve city life and to strictly control the development of professions that create pollution.

Second, environmental protection must combine with industrial readjustment to reduce environmental pollution. In readjustment, some plants and enterprises should be closed down, terminated, combined, or transferred. This is beneficial to improving the planning of industries in cities, rational utilization of resources and energy resources, and reducing the pollution of the environment. Environmental protection departments should cooperate closely with this work, grasp tightly the work of surveying plants and enterprises in residential areas, protected areas of water sources and scenic and tourist areas. All enterprises that cause serious pollution, produce noise and cause serious vibrations and conflict with the masses sharply and cannot be controlled should be closed down, terminated, combined, or transferred via industrial readjustment, reorganization and merging, and the key is combining and transferring.

Third, environmental protection must combine with the technical reform of enterprises, actively urge the old enterprises to control pollution. According to the policy of readjustment, the future development of industry will rely mainly on the technical reform of existing enterprises. At present, our nation's industrial technology is relatively backward, the consumption of resources is large, the economic results are poor, pollution is serious. Therefore, control of pollution by old enterprises must be tightly combined with technical reform centered around conservation. We must use nonpoisonous or less poisonous raw materials, nonpoisonous or less poisonous technologies in the process of conversion of resources and energy sources and in production technology to eliminate polluting factors in the production process, and while pushing forward technological reform and renovation of facilities of enterprises, we must solve the problem of environmental pollution to realize a unification of environmental results, economic results and results of conserving energy. Industry's "three wastes" are fundamentally a waste of resources and energy sources. We must implement various kinds of policies of encouragement and develop the comprehensive utilization of the "three wastes" of industry in a big way, reduce the wasting of resources, increase the wealth of society, and reduce pollution of the environment.

One important reason for our nation's environmental pollution and destruction is poor management. We must urge the plants and enterprises to include strengthening environmental management in their production management; establish a responsibility system and a reward and punishment system for environmental protection; strengthen supervision by the masses; eliminate running, spewing, dripping, and leaking; develop civilized production and activities for "clean plants"; utilize legal, economic and administrative means to restrain plants and enterprises externally; and urge enterprises to reduce pollution of the environment. Starting this year, we must implement the system of retrieving waste from released pollutants nationally, and we must conscientiously summarize the experience in this regard so as to promote it more widely.

Fourth, environmental protection must combine with city planning and construction to gradually imporve the environment in the city. During the period of readjustment, the state must gradually strengthen construction of urban dwellings, city administration and public construction, culture, education and public health, commercial networks, and greening of the cities, and readjust the proportion of "bones" and "flesh." Environmental protection departments must actively coordinate with the city's construction departments to do the work of overall planning and comprehensive planning of various projects in city construction, establish plans for the control and management of the city environment, do the work of rebuilding old sections of cities and greening of cities according to plan and step by step, undertake well the centralized supply of heat, and popularize civilian use of gas to improve the city's environment. Newly built satellite towns, industrial zones, and residential zones must do the work of environmental planning well from the start of construction, utilize the method of supplying heat for large territories or supplying centralized heat by using scientific planning, rational economy, advanced technology, and avoid regression.

We must do well the work of environmental protection in the capital, Beijing, as well as in Hangzhou, Suzhou, and Guilin. Beijing is the capital of our nation; it is the center of communications between China and the other nations of the world. Environmental protection here must lead the nation. This requires conscientious study and implementation of the four suggestions regarding construction for the capital proposed by the Central Secretariat; we must do well the work of planning city construction and controlling the environment, take forceful measures and positive actions, and exert efforts to produce visible improvement in the environment within 3 to 5 years to build Beijing city into a beautiful, clean and first-class modern city according to plan and step by step.

In Hangzhou, Suzhou and Guilin, our nation's famous scenic tourist cities, we must plan well according to the nature and characteristics of the cities, take measures, exercise strict control, prevent destruction of natural scenery and historical ruins, and gradually restore scenic places that have been damaged.

Fifth, environmental protection must combine with readjustment in building up agriculture, forestry and water conservancy, and strengthen management of the natural environment. Protecting the natural environment is an important duty of environmental protection departments. They must conduct surveys and studies according to plan, understand the situation, and gradually develop work in this regard. At present, they must especially prevent damage to forest resources and water and soil resources, pay attention to reviewing the environmental effects of large and medium water conservancy projects and the use of water in construction projects; they must prevent blindly encircling lakes, filling in rivers and overexploitation of underground water which are activities that destroy water resources; they must maintain the natural ecological balance and promote the good cycle of agricultural ecology. They must do the work of zoning natural protective regions well and gradually establish and expand the various types of natural protective regions according to actual need and the possibilities so that the natural environment of our nation's representative natural ecological systems, the original regions of precious wild life animals and plants, important natural historical grounds and scenic places can be properly protected. To rationally develop and utilize our nation's territorial resources in the period of readjustment, we must organize and develop the study of environmental economics and natural territorial economics, strengthen the comprehensive survey of national territorial resources and overall socioeconomic investigations, create conditions, and gradually develop our nation's planning work for the control, management, development and utilization of our nation's territory.

Environmental protection is a new field, it has started late, its foundation is weak, it has little experience, it is in a founding stage. The task of developing this field is glorious and difficult. During the period of readjustment, we must exert efforts to build up the environmental protection departments themselves so as to establish a foundation for the development of environmental protection in the future.

First, we must grasp tightly the building of environmental monitoring stations of all levels and form working capabilities as quickly as possible. We must survey the sources of pollution well, and by monitoring and evaluation we must clearly check the environmental quality of some key regions and water regions and establish a system of "environmental quality reports."

Second, we must develop environmental scientific research work. We must concentrate forces to establish well the first-level provincial scientific research agencies that have better conditions and gradually develop the specialized uniqueness of each agency. We must arrange scientific research plans according to the characteristics and actual needs of our nation's environmental protection and produce scientific research results.

Third, we must speed up the training of talent. We must do the work of staff education well, carry out on-the-job operations training of personnel well, and exert efforts to elevate their ideological level, technical level, and management level. At the same time, we must include the training of special talent in environmental protection in the nation's educational plans and popularize environmental education throughout the society. We must recognize that this affects long-term environmental protection work.

Fourth, we must establish and make sound the various environmental laws, regulations, and standards, and quickly establish a system of environmental laws, regulations and standards which take into account our nation's unique characteristics and which suit our nation's national situation.

During readjustment, environmental protection work will encounter many difficulties and conflicts; the ideological and political work must be strengthened to further mobilize the enthusiasm and creativity of the broad numbers of cadres and scientific and technical personnel on the environmental protection front. Environmental protection is the business of all the people; it is not something that the environmental protection departments can complete on their own. We must be skilled in coordinating with each department and each sector closely, strengthen coordination and cooperation, exert mutual efforts to do the work well to hasten the development of our nation's environmental protection work and make new contributions to the construction of the four modernizations!

9296
CSO: 5000/4079

PEOPLE'S REPUBLIC OF CHINA

LEVEL OF ENVIRONMENTAL SCIENTIFIC RESEARCH ANALYZED

Beijing HUANJING BAOHU [ENVIRONMENTAL PROTECTION] in Chinese No 2, 1981 pp 3-6

[Article by Guo Fang [6753 2455]: "The Task of Environmental Scientific Research During the Period of Readjustment"]

[Text] At present, we face the great task of readjusting the national economy. That which must be withdrawn must be withdrawn, that which must be carried out must be intensified. Education, science, culture and health must continue to develop as much as possible, the results of economic work must be improved in each aspect and the people's livelihood must be improved. Therefore, readjustment is an active policy. Temporary and partial retrenchment is the road to a steady, healthy development of the national economy. During this period of major readjustment, how should environmental protection be readjusted? What is the task of environmental science and technology? This is also a question that people are concerned about. I would like to present some views regarding this question.

I. We Must Realize Coordinated Development of Economic Construction and Environmental Protection Through Readjustment

To carry out the four modernizations we must have a correct guiding ideology. We must start out from the actual situation of China. The actual situation of our nation is: socialism; a large population; of the 1 billion population, 800 million are farmers; the foundation is weak; the level is low; the territory is extensive; we have a long history; the natural types are complex. The people of the whole nation, under the leadership of the Communist Party, have build a relatively complete economic system after 31 years of construction; they now have 400,000 enterprises, fixed assets of industries have increased over 20 times, and a serious environmental problem has emerged.

The environment includes the atmosphere, bodies of water, land, mineral deposits, forests, wild animals and plants, natural protective regions and scenic and tourist regions. It is the basic condition of the nation's natural resources and the people's life. Therefore, protecting and improving the environment are the foundation of economic and social development. They are also the condition to assure and improve the work and rest of the people. The socialist system can rationally develop and utilize natural resources through planned economy to assure economic development while protecting the environment. But because we were influenced by the leftist mistakes, we understood the problem of environmental protection relatively late, we did not do the work of comprehensively balancing the national economy, and thus an imbalance was created. We neglected the protection, improvement and optimization of the environment in the relationship between construction for production and environmental protection, in the relationship between science and technology and the coordinated development of the economy and society, the relationship between handling of accumulation and consumption, in development and utilization and protection of natural resources, in controlling the scale and direction of investment and the rational arrangement of the structure of the production enterprises of capital construction and regional planning, and in the consumption of energy sources, raw materials, materials and business management. At present, environmental pollution and the destruction of natural resources are fairly serious. This problem must be placed in its proper position and correctly solved through this economic readjustment. Otherwise, if the situation is allowed to develop further, it will surely affect the people's lives, hinder construction for production, and cause countless disasters later.

II. We Must Utilize the Good Opportunity of Readjustment To Strengthen Environmental Protection Work

The environmental problem does not concern just environmental pollution: it also includes the destruction of natural resources. Destruction of the environment is caused by natural disasters and it is also caused by man. Natural disasters such as earthquakes, eruption of volcanoes, windstorms, drought and flood, disease and insect pests all create serious destruction of the environmental ecology. We grasped this problem early; after liberation, the state concentrated manpower and materials to develop scientific research and took effective measures and carried out prevention; for example, building water conservancy projects in a big way, destroying and eradicating locust, preventing blood fluke and regional diseases, forecasting disastrous weather, controlling sand and alkalinity, preventing the flow of mud and rocks, controlling the sinking of the ground surface, retaining water and soil, forecasting earthquakes etc, have all shown results. We also established a group of management agencies. Our nation has paid serious attention to natural disasters that endanger people's lives and carried out major efforts to prevent and control natural disasters that endanger the people's lives and safety, and these have fully shown the superiority of the socialist system.

Now the problem is that environmental pollution and destruction caused by man have become outstanding. Premier Zhou emphasized again and again in the past that prevention of pollution and protection of the environment are major tasks that affect our offspring and later generations. But because our understanding was deficient, they did not receive the proper attention. Money was spent on environmental control projects, but the economic results were not ideal. Viewing the whole situation, environmental pollution and destruction of the ecology were not controlled but continued to develop. Scientists have analyzed this trend and believe this is a potential threat and we should be highly alert. We must strengthen environmental protection work during this good opportunity of readjustment. We must place environmental protection work in an important position like solving natural disasters.

First, the urgent task of environmental departments is to strictly monitor the execution of environmental protection laws and to establish a system of environmental legislation, such as laws protecting the atmosphere, controlling noise, protecting water quality, the oceans and natural resources, environmental management regulations in capital construction, and regulations for environmental monitoring work. This legislation must be drawn up and promulgated as quickly as possible. Each region must start out from the actual situation and draw up regional standards and rules; each region should implement the reporting system for evaluation of environmental effects and environmental quality, establish planning for the environment, and fully develop the monitoring and managing functions of environmental protection departments. When drawing up national economic plans and social development plans, environmental protection must be an important aspect of the comprehensive balance, and planning management must be strengthened.

Second, new polluting sources must be strictly controlled. Through the readjustment of capital construction, we must consciously and firmly terminate all construction projects that are irrationally planned, that waste a lot of energy sources, resources, materials, that pollute the environment and that do not have control measures.

Third, the capital and some famous tourist cities must take the lead, concentrate forces to do the work of environmental protection well, carry out beautification and improve the environment so that they can serve as the model for the entire nation.

Fourth, problems that threaten the people's lives, problems of seriously polluted water sources and the atmosphere and the problem of noise must be tightly grasped and solved. At present, control of pollution created by commune and brigade enterprises and pollution by farm chemicals and foodstuff must also be strengthened to prevent them from harming people, and in particular, destruction of the natural environment must be stopped.

To solve these problems, we must first strengthen environmental monitoring and scientific research, develop investigative research in a big way, understand clearly the quality of the environment, realize what should be done to provide scientific foundations for environmental control, environmental policies, measures of prevention and control and technology, and to study our nation's technological and economic policies to accumulate data, samples and information for thoroughly solving our nation's environmental problems.

Strengthening the study of environmental sciences, doing a good job of scientific preparation, and preparing well for solving the environmental problems needed in the construction of the four modernizations are very important tasks in environmental protection work during the period of readjustment.

III. The Tasks of Environmental Scientific Research During the Period of Readjustment

The state has already determined that during the period of readjustment, science and technology must continue to develop, and has proposed that science and technology and the economy and society should develop in coordination. This is because science and technology have penetrated deeper and deeper into every aspect of the economy and social life, becoming important factors indispensable to economic and social development. On the other hand, the selection of key scientific and technological projects, the proportion of the various types of research work, the scale and speed of development of business, the manpower, materials and finances used must all take the present economic and social situation into consideration.

The position of environmental protection has become more and more important as the economy and society develop. Environmental protection work must pay a lot of attention to scientific and technological factors. Several years ago, the state invested capital in the control of environmental pollution, and some efforts produced poor economic results because of a lack of scientific and technical guidance and created waste. Scientific environmental evaluation was not carried out beforehand for some engineering construction projects, and the result was irrational planning and the environment was destroyed. There are many reasons that have created the situation today of having to spend money to control the environment on the one hand while the quality of the environment continues to drop on the other hand. But not paying attention to scientific and technological research is an important reason. We should take this as a lesson, take the good opportunity of readjustment to greatly strengthen environmental scientific research work.

1. First we must strengthen scientific research in environmental management, develop the study of the sciences of environmental management, environmental economics and environmental law, and systematically study our nation's environmental problems theoretically to provide a scientific basis for environmental laws, regulations and economic and technological policies that are suited to our nation's economic and social levels. We must also provide suitable methods and means of monitoring environmental quality, study the ability of natural purification and the capabilities of the environment in order to provide a foundation for drawing up environmental standards and plans which can be put into practice. We must strengthen the scientific research in environmental management. This will serve importantly in the overall control of environmental pollution and stimulate control.

2. We must emphasize the scientific study of the comprehensive prevention of pollution of key regions, cities and water supply systems--for example, the environmental quality study of the Beijing-Tianjin-Bohai region that is closely related to the protection, improvement and construction of the environment of the capital; the study of the Songhuajiang water system that has a serious effect upon imporvement of the environment of the northeastern region; the study of comprehensive prevention and planning of pollution in the Shenyang city area; and the comprehensive study of the environmental quality of the Xiangjiang water system which is a tributary of the Changjiang. These must all concentrate forces and cooperate in a big way to realize scientific research results and provide plans for preventive and controlling measures for the future. They will also provide methods and experience in the control of pollution for each profession.

3. We must develop the basic studies and the study of new technology in environmental science.

Solving environmental problems first requires the development of environmental science and emphasis on basic research. This is a prerequisite for drawing up practical environmental and economic policies, technical policies, preventive and control measures, environmental planning, environmental management and environmental standards. Developing research in these aspects is an urgent task in view of the need to solve environmental problems. Viewed from the angle of the development of natural sciences, it also has long-range strategic significance. The development of modern science and technology frequently makes breakthroughs on the scientific frontiers; environmental science is a new comprehensive science, it is nurtured by every branch of science and it provides new points of growth for the development of other sciences. It can push forward the development of earth science, biology, chemistry, physics and mathematics and new technological sciences. The present emphasis is on the study of the patterns of motion of pollutants in the environment and their effects upon ecology and upon the human body; the study of how to manage, protect and build the environment according to ecological patterns and economic patterns; the study of new technology to monitor and control pollution, to utilize field surveys, simulation experiments and mathematical models, systems analysis and such research methods to gradually perfect the methodology and basic theory of environmental science, develop each branch science, develop surveys of polluting sources and ecology, and establish an inventory of samples and data banks. We must accumulate basic information for scientific preparation to establish our nation's medium- and long-range environmental plans and plans for environmental science and technology.

4. We must improve the organization and management of the science and technology of environmental progection. The environment is a spatial structure of many layers, many units, many media, and many elements. Human activity which irrationally feeds materials, energy and information to the environment will affect ecological systems and affect man's health through physical, chemical and biological functions. Facing such a huge and complex environmental system, there must be macrocosmic and microscopic studies; there must be broad surveys and there must be pinpoint observations; there must be precise microscopic analysis and there must also be comprehensive studies. This requires organizing multidisciplinary research and developing multiple channel research. The state's leading scientific organizations need to strengthen the work of organizing and managing scientific research, mobilize the scientific and technical research units, fully mobilize the enthusiasm of all sectors, develop unified plans, cooperate together and rationally distribute the work. Doing everything alone will not work; everyone has to work to establish the foundation well to lessen roundabout ways and to utilize the limited capital precisely. Less money should be spent to do more work and redundant construction should be avoided. We must select the best to support the scientific research institutes that have a good foundation so as to gradually help them to become centers. In addition, we must arrange forces according to plan and with proper organization to study the introduction of technology, to digest and improve it. We must conscientiously do a good job of managing the results and of popularizing and applying them.

5. We must train talent and improve the level of the environmental science and technology teams. Our nation's environmental science and technology started late; at present, the number and the quality of the environmental science and technology teams, generally speaking, cannot meet the needs of the task of scientific research. Some environmental research institutes do not have academic leaders and lack a scientific research backbone force, the strength is weak, the direction is not clear, and they should be reorganized and readjusted. We must concentrate forces to establish well the provincial level research institutes that have better conditions and pay attention to strengthening academic leadership. We must actively develop academic exchange, organize scientific and technical personnel to visit and inspect the field, be receptive to new ideas, and improve the level of research work. The environmental society must sponsor many academic activities, popularize the knowledge of environmental science, and do a good job of publishing journals to satisfy the learning needs of scientific and technical personnel. At the same time, we must organize and develop international academic exchange and continue to improve the academic level and the working ability of the scientific research personnel. Research agencies and universities should admit more research students in environmental science or hold continuing education classes, lecture classes, and discussion meetings to train midlevel and high-level talent. During the period of readjustment, actively training talent is also an important task in carrying out scientific preparation.

Our nation's environmental protection science and technology have developed through the efforts of the past several years from the study of ordinary techniques of control to the study of regional comprehensive control and prevention; from the study of prevention and control of pollution by the "three wastes" to the study of human ecological systems; from surveys of pollution of the environment to the study of the migratory and conversion patterns of pollutants, their simulation, models and systems analysis; from manual sampling, analysis and monitoring to biological monitoring, developing automatic monitoring instruments, utilizing remote-sensing techniques, building monitoring vehicles, monitoring vessels by ourselves, we built Asia's tallest 325-meter pollution observation tower; from the macrocosmic surveys of infectious diseases to microscopic study of environmental toxicology; from the study of natural sciences to the interdisciplinary study with social sciences. We have already opened up environmental engineering, environmental chemistry, environmental physics, environmental biology, environmental earth sciences, environmental medicine, environmental economics, and environmental law and management. They have established a preliminary foundation for the development of our nation's environmental science and technology. In the future, as long as we conscientiously implement the policy of readjustment of the Central Committee, actively strengthen the scientific and technical work in environmental protection, conscientiously organize and implement the various scientific research tasks, we will surely be able to solve our nation's problems in environmental protection, and contribute what we should to create a beautiful environment for building our nation's socialist material and spiritual civilization.

9296
CSO: 5000/4079

ENVIRONMENTAL WATER CONSERVANCY PROBLEMS DISCUSSED

Beijing HUANJING BAOHU [ENVIRONMENTAL PROTECTION] in Chinese No 2, 1981 pp 13-15

[Article by Shen Ganqin [3088 0984 0615]: "Brief Discussion of the Environmental Water Conservancy Problem"]

[Text] At present, our nation's water resources are deficient and the water is polluted. These problems have attracted more and more attention and concern. According to statistics, our nation has an average annual rainfall of 630 millimeters; the total amount of rainfall is about 6 trillion cubic meters; except for evaporation and leakage, the flow in rivers and over land surfaces totals an annual average of over 2.6 trillion cubic meters--less than Brazil, the Soviet Union and Canada, and slightly less than the United States, ranking fifth in the world. The national average depth of water flow is 274 millimeters, slightly higher than the world's average, but lower than the average in Asia, Europe and Latin America. By population average, the per capita average water flow in the world is 10,000 cubic meters, the highest is in Latin America at about 50,000 cubic meters, in the Soviet Union and the United States the average surpasses 10,000 cubic meters, that in Britain, France, Germany, Italy and Japan is between 3,000 and 5,000 cubic meters, while in our nation it is only 2,700 cubic meters, about the same as the per capita average (2,528 cubic meters) of water actually used in the United States in 1975. In general, in the total amount of ground surface water, our nation is relatively rich; in the unit area production of water, our nation is average; but in per capita average flow, our nation's water resources cannot be said to be rich. Also, the distribution of water resources in time and space is very uneven.

We build dams and reservoirs, carry out water conservancy projects; technically, these are efforts to regulate the uneven temporal distribution of flow. Transferring water across river valleys is an effort to regulate the uneven spatial distribution of flow. After liberation, our nation carried out large-scale water conservancy construction; the large Yellow River, Huai River, Hai River, the Changjiang, Liao River, Pear River and many medium and small rivers were controlled to varying degrees. In reservoirs alone, over 86,000 were built; the achievements have been recognized by the world; the total reservoir capacity reaches 400 billion cubic meters, but this constitutes only one-sixth of the total annual flow. The utilization of hydro energy constitutes only 4 percent of the resources. In addition, our nation's large rivers and even some medium and small rivers still have not been completely controlled, and floods, waterlogging, drought, and alkaline disasters can happen any time; the flooding areas of large rivers are also regions with a concentration of population and are economically more developed. Therefore, from the standpoint of developing and utilizing water resources, the water conservancy projects are not too many, but not enough. Therefore, emphasis must be placed on the survey, evaluation, rational utilization and balance of the supply and need for water resources. Pollution of water sources affects the livelihood of the whole nation and the people, and it should be emphasized more.

According to comparable data of 14 provinces and cities, in 1979 the entire nation released a daily amoung of 77.8 million tons of polluted water from industry and from living. Of the 78 rivers being monitored, 54 were polluted, and 14 were seriously polluted, including some important rivers which were all seriously polluted.

Take the Huangpujiang in Shanghai as an example: the Huangpujiang originates in Dianshanhu and Taihu, the specific drop of the riverbed is small, the annual average flow is about 300 cubic meters per second. Because of the development of production and the increase in population, the release of pollutants has increased. Beginning in 1963, the river section in the Shanghai city area has a black and smelly period each year. In 1978 it lasted 106 days, and in 1979 it lasted 99 days. From May to September during the period of massive use of water of Huangpujiang for farming, the average ratio of clean water to dirty water over many years was 6:1 to 4:1; in 1978 and 1979 it was less than 2:1; if the situation is not grasped tightly and controlled, the ratio of clean water to dirty water will be reduced further, and by that time it will be impossible to use the water of the Huangpujiang as drinking water any more.

The water quality of the Bangbu section of the Huai River is also poor! Since 1975, during the period when the floodgate of the Bangbu is closed each winter and spring, the river water is brownish black and stinks, the dissolved oxygen drops to below 1 milligram per liter, large numbers of fish and shrimp die. The situation gets worse year after year. In 1979, the worsening of the spring water quality became more noticeable: 400,000 people of the entire city did not have any drinking water; many people had to rely on the small amounts of water sources in air raid shelters and the few water wells. The floodgate was closed on 1 November 1979, and 9 days later the dissolved oxygen in the river water dropped from 7 milligrams per liter to nearly zero, the rate of worsening of the water quality was faster than usual by onefold.

Second there is the pollution of the Songhuajiang, which everyone knows about. The accumulation of mercury in the bottom mud of the river is about 250 tons; the content of mercury in the river water is several times that in Minamata Bay in Japan, which shocked the world.

These changes have given our water conservancy workers a new recognition in concept: in the past when we talked about damage by water we referred to flooding, waterlogging, drought and alkalization, now it seems we must add "pollution."

How to solve "pollution" should be an important part of the long-range plan of our nation's environmental protection sceince and technology and it must be emphasized. This is because once a water network is polluted, it is difficult to solve the problem. For example, the cleaning of the Thames in Britain took over 100 years and several hundred million pounds of investment, not including the organization and legal measures by the British Government.

To better solve the problems of pollution by the three wastes, besides controlling the polluting source that causes large amounts of pollution, that pollutes a large area, that causes serious damage which in turn causes serious pollution, management should also be strengthened, the technology should be reformed, and comprehensive utilization must be implemented. We should start out by cutting down wastefulness, correctly handle the relationships in nature, the polluter and the environmental protection department, and rationally distribute the amount of pollution each should be responsible for. To us, the environmental protection workers, this means controlling water quality management and planning well. Through the cooperation of each sector, we must reduce the three wastes in the production process to the most rational degree. In the question of environmental protection, we must redirect our struggle against the results of environmental pollution to a struggle against the cause that produces environmental pollution. We must change from being passive to taking the initiative. It can be said that during the period of readjustment, whether we can or cannot do the work of environmental protection will affect the smooth progress of the building of socialist modernization in the future.

We have repeatedly emphasized in the past that environmental workers of the water conservancy departments should not be responsible only for the protection of water sources, but they should also pay attention to environmental water conservancy work, and a very important aspect is evaluation of the environmental effects of water conservancy engineering projects.

In foreign articles of recent years, a large number of reports and views have been published regarding the environmental effects of water conservancy engineering projects. Most of the views affirm the necessity of evaluating the environmental effects of water conservancy engineering projects, but there are also two extremes. One believes that building water conservancy engineering projects destroys the ecological environment and it cannot coexist with environmental protection; this view complains that there are already too many water conservancy projects and asks that water conservancy engineering projects not be built any more. The other view believes that water conservancy construction coincides with reforming nature and benefits human needs and it also coincides with the wish to protect nature; therefore it asks for a reinstatement of the good reputation of water conservancy engineering projects! Actually, building water conservancy engineering projects eliminates flood disasters, builds up water conservancy, reforms nature and benefits mankind; its function and significance are known by everyone. But when developing visible gain, sometimes because of insufficient understanding or mishandling, unfavorable effects upon the ecological environment are also produced; this also objectively exists. The task of our water conservancy workers is to fully develop the gain of water conservancy engineering projects and to avoid any unfavorable effects upon the ecological environment as much as possible so that each water conservancy engineering project will not only produce better technological and economic results but also good environmental quality results. This is also the responsible attitude our water conservancy workers should have toward the people and offspring and later generations. For this, we must exert great efforts to do a good job of evaluating the environmental effects of water conservancy projects.

For over 10 years, evaluation of environmental effects has already rapidly developed into a science. This fact shows that the people have a relatively uniform understanding of the necessity of evaluating the environmental effects of engineering projects. Of course, there are different opinions, including the fact that there still is no scientific standard for the evaluation of environmental effects at present, there is no quantitative measurement; such evaluation cannot be forcefully implemented to avoid delaying the progress of construction projects and the development of resources. But it should be pointed out that in the entire course of the development of evaluation of environmental effects, scientific research work has always been placed at the forefront. Recognition of thispoint is fairly uniform and there are no exceptions in other nations. In this scientific research work, I want to emphasize three points: 1) formation of system; 2) coordination of multiple disciplines; and 3) emphasis on ecology.

Generally speaking, developing production and protecting the environment are both aimed at benefitting mankind. The goal is the same. But in the actual problems they frequently conflict. We must insist on solving the environmental problems while developing production, and at the same time, we must emphasize the development of production within the allowable range of the ecological system, we must include environmental problems in the overall national economic plan.

In the theory of environmental science, compared to foreign nations, we did not start out too late, the topics and problems for discussion are also not much different, but we have fallen back in the practice of environmental protection. The problem is that they began and took action and did what they said they should do, while we stopped at discussion and our practice was not enough. Practice reveals true knowledge. In the evaluation of environmental effects, besides theoretical research work, work in the following three aspects can be carried out in practice at present: undertaking preliminary evaluation, evaluation of the present situation, and retrospective evaluation. The importance of preliminary evaluation does not need any explanation. We must make decisions that are binding: large-scale engineering projects cannot be started without preliminary evaluation. Evaluation of the present situation refers to the evaluation to be made for current engineering projects that have not had a preliminary evaluation. Doing this is being responsible to the people. Of course, this does not mean retrospective evaluation is not important. Retrospective evaluation has an irreplaceable function in summarizing experience, developing science, improving the evaluation technique, and providing a scientific basis for making up the shortcomings of the engineering projects.

During the coming period, the emphasis of our nation's economic work is on undertaking readjustment. In the readjustment of the national economy, each department, each profession will undergo improvement or streamlining; environmental problems belong to the side of imbalance, and this should be improved. We must take this favorable opportunity to grasp tightly the development of the evaluation of environmental effects. We should also take action, do what we say, gain experience in practice, gradually improve and form a system.

9296
CSO: 5000/4079

ECOLOGICAL BALANCE AFFECTED BY LOSS OF LAND

Beijing HUANJING BAOHU [ENVIRONMENTAL PROTECTION] in Chinese No 2, 1981 pp 16-19

[Article by Qu Geping [2575 2706 1627]: "In Ecological Danger; Major International Environmental Problems III (continued); Punishment by Nature"]

[Text] Land constitutes only 29.2 percent of the earth's surface. The rest is water. But the majority of the higher forms of life on earth live on land; in particular, human beings all live on land. Therefore, land is a most important part of the cycle of live beings. Man relies upon the ecological systems on land to engage in agriculture, livestock production, forestry and many other kinds of economic activities to satisfy his need for food and other needs. In the land ecological systems, soil is the most fundamental and most important condition; it is the main factor that determines the structure and types of ecological systems. Soil suitable for plants to grow is formed by evolution and complex changes of thousands of tens of thousands of years of weathering and erosion of rocks and biological activity. Through the overexploitation and improper utilization by man, soil can degenerate or be destroyed within several dozen years or even several years. Once soil degenerates or is destroyed, generally it is very difficult to restore it to its original state. The destruction of soil is the greatest blow to agricultural production.

In order to increase the production of food grains, people have actively improved drainage and irrigation systems and used massive amounts of chemical fertilizers and farm chemicals, although these have all produced visible results; but the traditional closed cycle of the ecological system is thus broken, and the system loses its natural properties more and more, becoming unstable and weak. When man's need for food increases, and under the pressure of urgent expansion of cultivated land and livestock fields, forests are destroyed for reclamation, overproduction of livestock and intense and hasty planting activities destroy the ecology and create serious loss of water and soil. This phenomenon is spreading over large areas of the world. Northern Africa, which enjoyed the name of being the granary of the world during the Roman Empire, has now become a desert or a semidesert region; most of the food needs depend upon imports. In El Salvador 77 percent of the land, and in Madagascar 80 percent of the land, have been rapidly washed away. In the eastern mountain regions of Nepal, 38 percent of the land has been abandoned because the fertile surface layer has been washed away. Under ordinary conditions, each year, each hectare of land forms about 3.75 tons of surface soil. According to measurements by the United States, each year each hectare of land loses 30 tons of top soil; the loss is eight times faster than the formation. According to estimates, each year the world loses about 24 billion tons of soil because of washing away, several dozen million tons of fertilizers are lost, and to replenish this loss of soil requires several dozen billion U.S. dollars. The thin layer of soil wrapped around the earth's surface cannot bear such long periods of great loss. This is an important environmental question faced by world society. According to statistics of the U.S. Environmental Protection Agency, the rate of erosion of different types of soil each year is listed in the following table:

Table 1.

1）土 地 类 型	2）吨/平方公里	3）短吨/平方英里	4） 相对率(以森林为1）
5）森 林	8.5	24	1
6）草 地	85	240	10
7）废弃露天矿地	850	2,400	100
8）耕种土地	1,700	4,800	200
9）开发中的露天矿地	17,000	48,000	2,000
10）建筑工地	17,000	48,000	2,000

11)* 1短吨=0.907吨

Key:

1. Soil type
2. ton/square kilometer
3. short ton/square mile
4. Relative rate (taking forest as 1)
5. Forest
6. Meadow
7. Abandoned exposed mines
8. Cultivated land
9. Exposed mining fields being exploited
10. Construction site
11. * 1 short ton = 0.907 ton

Because of massive felling of forests, vegetation is destroyed, and this has worsened the damage by floods and silting of river channels. The destruction of the forests of the Himalaya Mountain Range has increased the frequency and the degree of damage by floods in India, Pakistan and Bangladesh. The Achicaya Dam in Colombia was put to use in 1955; because of sedimentation from silt, it lost one-fourth of its storage capacity within 22 months. In 10 years, silt and mud filled three-quarters of its reservoir capacity. The Tarbela Dam in Pakistan cost $1.2 billion; because of serious silting, it is estimated that it will have to be abandoned in less than 50 years.

Destruction of soil also produces adverse effects upon the weather. Soil bacteria serve importantly to regulate the atmospheric content. They serve a key function in most biological and geochemical cycles, such as regulating nitrogen, carbon and phosphorus. Minerals and plant dust from the soil are the conditions for forming clouds and rain; they are also the main factors that reflect solar radiation and reduce the intensity of solar radiation reaching earth.

The loss of land is large. According to estimates by the Environmental Agency, the world loses 5-7 million hectares of land each year. Since the beginning of history, about 2 billion hectares of land have been lost, more than the present area of cultivated land of the entire globe. There are many reasons that cause the loss of land, such as improper utilization which promotes the soil becoming infertile until it cannot be planted any more; for example, in the United Kingdom of Great Britain and Northern Ireland, some of the soil has an overly low content of organic substances and cannot be planted by ordinary methods. Erosion by water and wind: according to statistics of the Food and Agriculture Organization, the loss of land due to erosion by water and floods and waterlogging damage constitutes 30 percent of the various types of loss of land. Salinization and alkalization of soil: according to statistics, 30 to 80 percent of the world's irrigated land is more or less affected by salinization. Each year, 200,000 to 300,000 hectares of land is lost to salinization and flood water. Chemical pollution: because of the use of chemical fertilizers, chemical insecticides, chemical weeders, and the effects of the release of industrial waste, poisonous substances in the soil have increased drastically, destroying the structure and the fertility of the soil, and land has even had to be forcefully abandoned. Overproduction of livestock in grasslands: for example, in Kordofan Province in Sudan on the edge of the Sahara Desert, the number of domesticated livestock increased fourfold between 1957 and 1966. Since then, the number has continued to increase. The result of overproduction of livestock is a destruction of the dynamic balance between livestock and the natural grazing ground, causing grasslands to become deserts or semidesert areas. This overproduction of livestock exists in other areas of the world. Cities, construction, transportation, mining--all cause a loss of large amounts of land. The United States loses 1 million hectares of land each year to urbanization and transportation construction. Japan lost 7.3 percent of the cultivated land from 1960 to 1970 due to urbanization. In developed nations, at least 3,000 square kilometers of cultivated land are lost to urban construction each year. This phenomenon also occurs in developing nations. For example, in Egypt, where cultivated land is scarce, because of urbanization, each year 60,000 acres are lost. According to statistics, the area of large cities is developing at a rate twice the rate of population increase. According to estimates, from 1975 to the year 2000, the area of newly added buildings will be two and a half times that of the original buildings. The development of cities in the future just for people to live in will cause a loss of 140,000 square kilometers of cultivated land, 60,000 square kilometers of grazing fields, and 180,000 square kilometers of forests each year throughout the world. If activities that destroy land are not effectively halted, according to estimates by concerned departments of the United Nations, by the end of this century the area of farmland per capita will be reduced on a large scale, and that will become a great threat to man's food subbly. (see Table 2)

With a drastic increase in population and a reduction in cultivated land, where will the food come from? This can only be solved by strengthening agricultural production; for example, by applying more chemical fertilizers, chemical insecticides, chemical weeders, expanding the area of irrigation, etc to increase the unit area yield. These methods have been proven to be effective. But they bring serious environmental problems. Between 1951 and 1966, the ratio of the increase in food grains and the increase in the use of chemical fertilizers and farm chemicals is 1:5:10. This means, for each increase of 100 in food grains, there is an increase of 500 in chemical fertilizers and an increase of 1,000 in farm chemicals. If this trend continues to develop, the harmful substances in the agricultural environment will greatly increase and will have serious results for the ecology.

Table 2.

1975年 1)	2) 人　口	40亿 3)
1975—2000年 1)	6) 耕地面积	12.4亿公顷 4)
	7) 每人平均耕地面积	0.31公顷
	8) 因都市发展损失土地	3亿公顷
	9) 因土壤退化冲蚀损失土地	3亿公顷
	10) 新增可耕地	3亿公顷
	11) 净 损 失	3亿公顷
2000年 1)	2) 人　口	62.53亿 3)
	6) 耕地面积	9.4亿公顷 4)
	7) 每人平均耕地面积	0.15公顷 5)

Key:

1. year
2. Population
3. x 100 million
4. x 100 million hectares
5. hectares
6. Area of cultivated land
7. Per capita average area of cultivated land
8. Loss of land due to urban development
9. Loss of land due to soil degeneration and washing
10. Newly added cultivatable land
11. New loss

Because of the destruction of vegetation, the loss of water and soil in our nation is also serious. The Yellow River takes away an average of 1.6 billion tons of mud and sand each year It is the river containing the highest amount of sand in the world. If the mud and sand were used to build a dike 1 meter high and 1 meter wide, it would circle the earth 23.5 times. Because of the sedimentation of mud and sand, the riverbed on the lower reaches rises about a dozen centimeters each year, reducing the amount of floodwater in the river channel, increasing danger, and the only way to solve the problem is by continually elevating the dikes. Now the normal water level of the Yellow River has already reached the same height as the tip of the iron tower in Kaifeng. Loss of water and soil has worsened the natural disasters of a broad region, especially drought, waterlogging, wind and sand in the loess plateau. Agricultural production has lessened, affecting the life of the masses. Loss of water and soil is also a national problem. Heilongjiang Province, situated in the northermost part of our nation, produces 4 billion jin of food grains less each year because of loss of water and soil. Guangdong Province, at the southern tip of our nation, has in recent years lost over 1,000 square kilometers to soil erosion, 793 rivers and creeks are seriously silted, and a large number of reservoirs have visibly less capacity. In the Changjiang River Valley in central China, the loss to soil erosion is over 20 percent each year and the amount of erosion of soil is about 2.4 billion tons, causing mud and sand silting in certain sections of the river. According to estimates by experts, each year, 5 billion tons of mud and sand are washed away throughout the nation, equivalent to stripping away 1 centimeter of fertile soil layer of cultivated land each year throughout the nation; the loss of nitrogenous, phosphorous and potassium fertilizers is over 40 million tons, equivalent to the grand total of chemical fertilizers produced by the nation in a year.

Where Is the Solution

Mankind is facing an ecological crisis; this is a disaster that has widespread effects and that can cause profound damage. Now, mankind faces two choices: one is to continue the present way of felling forests without control and destroying the ecology, resulting in a further worsening of the agricultural ecological system which has already been seriously devastated; the other is to protect the vegetation, maintain an ecological balance, and change the vicious cycle into a benign cycle, thus allowing a steady and prolonged development of agricultural production on a healthy foundation. The two ways lead to two futures, either of which can be decided by man himself. Mankind still has great authority. Now is the time to seriously and rationally exercise this authority and not abuse it.

Under the guidance of appropriate economic policies, protecting and improving the agricultural environment can be realized. In protecting forests, as long as felling is rational, as long as the forests are renewed in time, they will not be exhausted, and they can create a suitable environment for agricultural production and people's lives. It is believed internationally that a ralatively suitable ecological environment can be created if the forests cover over 30 percent of the land and if they are distributed evenly. This can visibly reduce the natural disasters of drought and waterlogging, promote the development of agriculture and livestock production. Western nations became aware of this relatively early, and have taken a series of protective measures so that forests cover an average of over 22 percent; this is higher in some countries, for example, 28 percent in West Germany, 32 percent in the United States, 35 percent in Canada, 55 percent in Sweden, 64 percent in Japan, and 74 percent in Finland. Japan and West Germany, to protect the nation's forests, are willing to import trees and will not fell their own. Many developing nations also recognize the bad result of destroying forests and have begun to take some protective measures; for example, the Philippines has limited the export of logs and has ordered all males over 10 years old to plant one tree each month for a period of 5 years.

Our nation has exerted many years of efforts in forestation and has realized great achievements. Since liberation, the cumulative area of forestation and preservation of forests is over 400 million mu; this has promoted the development of agricultural and livestock production and has provided large amounts of wood for national construction. In planting trees and forestation, each locality has had many good models. For example, Youyu County in Shanxi Province carried out greening projects for more than 20 years and has increased the area of forestation from the original 0.3 percent to 21.5 percent, visibly improving the ecological environment, promoting the development of agricultural and livestock production. The yield of food grains increased onefold, the number of livestock increased threefold. This shows that if the policy is right, protection is effective, planting trees and forestation will quickly produce results.

Appropriately solving the fuel problem of farmers is an important measure to protect forest wood. There are many methods of solving the problem of fuel, such as producing biological methane, establishing firewood forests, utilizing solar energy, building small hydroelectric power stations, supplying coal, etc. It is generally believed internationally that preducing biological methane and establishing firewood forests are simple and practical, they can maintain the ecological balance, and they should be actively popularized. The Food and Agriculture Organization, the Environmental Agency, the International Development Association, and such international organizations are helping some developing nations develop technology in this aspect.

Our nation has realized major achievements in the development of biological methane. Since 1975, our nation has already built 6,580,000 methane pits and the number of people using methane as fuel reaches over 30 million. The resources of biological methane are rich, the technology has been basically grasped; if economic and technological guidance and help are given, it can be popularized over large areas and the difficult situation of fuels can be turned around. According to calculations, if 300 million tons of plant stalks are taken each year and added to human and animal excretion, 100 billion cubic meters of methane gas can be produced, and this will be sufficient fuel for the farmers of the whole nation. Producing biological methane is a strategic measure to solve the energy supply in farm villages, protect the environment, and promote the development of agricultural and livestock production.

In addition, broad numbers of our nation's farm villages have also utilized water conservancy resources to build 90,000 small hydroelectric power stations which provide cheap electric power for agricultural production and living. But at present, only 5 percent of the exploitable resources have been utilized, so the potential is still great. In general, the energy resource conditions in our farm villages are good, a way has been found, and the future is bright.

9296
CSO: 5000/4079

DESTRUCTION, REBUILDING OF ECOLOGICAL BALANCE STUDIED

Beijing HUANJING BAOHU [ENVIRONMENTAL PROTECTION] in Chinese No 2, 1981 pp 20-21

[Article by Huang Yuyao [7806 3768 3852] and Xu Muqi [6079 2606 0796]: "Destruction and Rebuilding of Ecological Balance"]

[Text] Earth--the cradle of life, after 6 billion years of evolution, has formed today's world of living beings, the animals, plants, microorganisms and man. The genesis, development and evolution of all life are the results of the motion of materials in specific environments. Water, air, soil and sunlight on earth have created the fundamental environmental conditions for the existence of life. All kinds of living beings exist, propagate, die here and the cycle continues ceaselessly; they rely on each other for survival and mutually limit each other, reaching a kind of dynamic balance--this is what we ordinarily call ecological balance.

The natural ecological system has been formed over the course of development of history. The various factors of the life system and the environmental system in an ecological system are basically coordinated and stable. The delicate balance of the ecological system can be destroyed when a certain important factor is added or taken away externally, causing the output and input of energy and materials to undergo change or when such change surpasses that which the system is capable of regulating by itself. In productive activities, because man lacks a correct understanding of such a very complex problem of ecological balance, neglects the study of ecological systems, lacks sufficient understanding of the reactions of nature, therefore when developing and utilizing natural resources, he starts out from the benefits he sees before him, develops irrationally, and causes ecological imbalance, destroys ecological balance, and he is punished by nature. For example, the United States and the Soviet Union have blindly reclaimed forests and grasslands on a large scale, causing "black windstorms" and serious loss of water and soil; not only did they not realize the predicted results, but on the contrary, they turned the 100 million and 10,000 mu of good fields into deserts and sand dunes. The Volga River water conservancy and hydroelectric power project, which the Soviet Union regards as one of the greatest technological achievements, has brought about devastating effects upon the environment of that country itself and neighboring nations, resulting in the salinization and alkalization of large expanses of land and turning land into marshland; the loss was great. For the past 30 years since the founding of the nation, our nation's productive construction has realized great achievements, but because we did not act according to natural patterns in certain places, because we did not act according to the principles of ecological balance, such as overfelling of forests, overreclamation of mountain land, overproduction in meadows, overfishing in water regions, and especially serious was the large-scale destruction of forests and reclamation of wasteland, we destroyed the moisture nurtured by forests and the ability of forests to regulate the climate, causing an imbalance in climate in many localities, the loss of water and soil intensified, the areas becoming sandy continually expanded, and thus in some places drought occurred when there was no rain, flooding occurred whenever it rained, and natural disasters occurred frequently. This situation has become a vicious cycle, and the situation has become worse and worse, seriously endangering agricultural and livestock production. These are all the bad results from the destruction of the ecological balance.

The core of the ecological system is the colony of living beings. Ecological balance is maintained by the automatic regulation and self-repairing abilities of the various colonies of living beings. Therefore, as long as man fully recognizes and grasps the mechanism of biological regulation and actively creates suitable conditions for the colonies of living beings to carry on self-repair, then in most situations, the original ecological balance which has become unbalanced or destroyed can still be revived. For example, Australia introduced large numbers of cows and sheep to develop livestock production. Yet something that was not foreseen happened. Each day, the 45 million head of cattle deposited 450 million piles of large, damp cow dung in the grasslands, 50 large expanses of grass were covered completely by cow dung and the growth of grazing grass was suppressed. The cow dung weathered and became dry and hard and would not decompose for several years; it hindered grazing grass and plants "yellowed" and withered soon afterward. The green grasslands became areas of land without growth; each year, the area of grasslands destroyed by cow dung reached 360 million mu, seriously threatening the development of livestock production. The rapid increase in cow dung also provided the ecological conditions for the breeding of massive numbers of flies. The number of various types of flies reached the extent of covering the skies and the land. In 1960, some ecologists visited Australia and saw the traffic policemen in the capital, Canberra, waving their hands before their faces continuously, and reported satirically that the gesture was "Australia's salute"; actually, they were brushing away flies flying in front of their faces. Flies are carriers of infectious diseases and the intermediate hosts of parasites of domesticated animals. They are harmful to the health of man and animals. In this country, the ecological balance among grass-cows-flies-men was seriously unbalanced!

To solve this problem, the biologists decided from the ecological point of veiw to raise and release the dung beetle (commonly known as the dung beetle) to treat the cow dung and indirectly eliminate flies. For over 10 years, Australia introduced several species of dung beetles from our nation and other regions. Each year, 5 million dung beetles were released at 300 localities, and within 3 years the results were outstanding. The dung beetles rolled the recent cow dung into balls and then used their own skillful method to quickly transport the dung underground for storage. Thus, the soil structure was loosened, the nutrition in the soil was increased, and this promoted the growth of green plants and controlled the propagation of flies, stopped the spread of parasites and germs, the grazing fields that had almost collapsed were quickly revived and are now full of life, and the yield of grazing grass has doubled. The small dung beetle can serve such a great function in the regulation of ecological balance!

Our nation's ecologists and environmental biologists have also realized very significant achievements in developing the ability of self-regulation and repair of the various colonies of living beings in the ecological environment and the scientific research in rebuilding ecological balance. Yaer Lake in Hubei Province is an example. Before 1961, the lake was full of aquatic grasses, fish and various kinds of aquatic life; it produced fish, shrimp, and lotus. The annual yield of fresh fish was over 300,000 jin; it was a famous place for fish and rice in Hubei Province. Later, a large chemical plant was newly built on the upper reaches, and the waste water containing organic and inorganic pollutants such as parathion, dimethoate, benzene hexachloride was directly drained into the lake without any pretreatment, causing serious pollution of the lake surface; the fish died, the water for irrigation and living along the banks of the lake was polluted, and frequently people and animals were poisoned. The beautiful Yaer Lake of the past became "a pool of dead water." Since 1972, the scientific and technical personnel of the Aquatic Life Institute of the Chinese Academy of Sciences delved deeply into research using an oxidation pond to treat waste water with the support and coordinated efforts of the local government and the people. The researchers utilized the four major elements of the basic structure of the aquatic ecology--the producer (algae, aquatic grass), the consumer (animals, including fish), the decomposers (bacteria) and the nonbiological elements (solar energy, water and its chemical components) and their cooperative elements to fully mobilize the self-purification ability of the body of water so that during the course of activity of the oxidation pond, bacteria oxidized the organic substances in the waste water, forming carbon dioxide, nitrogen and phosphorus. The algae utilized these inorganic components under sunshine to synthesize their own cytoplasmic material and release oxygen for the bacteria to oxidize organic substances. The energy fixed by the algae was transmitted by each nutritional level and finally it was manifested by the fish caught; thus industrial waste water was treated, useful resources were retrieved, and the results of comprehensive utilization and changing the harmful to the beneficial were obtained. Today, the structure of the colony of the aquatic ecological system in Yaer Lake has begun to revive, fishery utilization has been successful and the land facies environment has been controlled and improved.

9296
CSO: 5000/4079

COMMITTEE RECOMMENDS ZONING RESTRICTIONS ON LIVESTOCK

Port-of-Spain TRINIDAD GUARDIAN in English 11 Aug 81 p 3

[Text] Livestock rearing should be prohibited in certain areas in Trinidad and Tobago, and no new farms should be established within these areas.

Farmers already within these areas can continue to farm with the provision that they institute waste management systems.

These are the recommendations of the subcommittee comprising representatives of the Ministry of Agriculture, Lands and Food Production and Town and Country Planning, according to the periodical of the Agricultural Development Bank, "The Villager."

The committee, whose primary objective was to recommend areas where livestock rearing should be permitted on the basis of health, town and country planning regulations, water supply and other considerations, made several recommendations including that rearing should be prohibited in the following areas:

--existing urban areas, residential industrial and ancillary urban-activity areas.
--proposed urban areas.
--areas of intensive recreation and of high potential of recreational development.
--areas within the Northern Range, reafforestation project, forest reserves, wild life sanctuaries, and nature reserves except between the heights of Guanapo.
--The Dorington Gardens, Petit Valley and La Pastora ground water acquifers.

According to the "Villager": "It was also recommended that in light of advanced technological discoveries and practices with respect to livestock waste management and waste purification," no new farms are to be established but existing farmers can continue to farm.

Farmers continuing to work in these areas must institute waste management systems in areas of significant ground water resources and areas within the catchment of surface water systems which are significant for water production with the exception of Ortoire and South Oropouche drainage areas.

Recommendations also came from a number of bodies including the Ministry of Health and Environment, the Forestry Division, the Director of Civil Aviation and the Water and Sewerage Authority(WASA).

CSO: 5000/7583

INSECT USED TO PRESERVE GUASARE RIVER ECOSYSTEM

Caracas EL NACIONAL in Spanish 26 Jul 81 p C-3

[Article by Antonio Reyes: "They Will Use an Insect To Preserve the Ecosystem of the Guasare"]

[Text] Maracaibo, 25 Jul-Scientists from the University of the Zulia will carry out a program to preserve the ecological system of the Guasare River, utilizing experimentally an insect which lives in this same tributary in the Mara district.

The specific goal of this project is oriented towards preventing the coal mining being promoted by Corpozulia from destroying the flora and fauna of this river in particular and of its ecosystem in general.

This program, under the auspices of the Center for Coal and Iron Investigations of the Zulia and the Council for Scientific and Humanistic Development of the University of the Zulia, is relying on the scientific advice of Drs Adolf King from the Environmental Systems Research Institute, Franz Weibezahn of the University of Caracas, and Joseph Jay Ewald, director in charge of the biology department of the University of the Zulia.

The study takes in the physical, chemical and biological characterization of the Guasare. That is, the determination of the involvement of calcium, sulphate, salinity, temperature, sediment and other parameters in its ecosystem.

The first biological samples of these elements were obtained starting in December when the investigations were begun.

The Insect

The center of the investigation revolves around an insect named "Bentic invertebrate macre." According to the explanation given by biologist Carlos Luis Bello, member of the staff at the university of the Zulia and responsible for the program, these tiny acuatic creatures are the first indicators of chemical or biological pollution. For this reason its present structure is now being studied in order to appraise the changes that it will undergo when mining operations begin, as foreseen for 1985.

It is very difficult to precisely determine and quantify chemical pollution, because very often there is a specified chemical concentration in the river bed which disappears completely with the coming of a strong current (washout). Therefore, nothing is obtained if measurements are not taken at this time.

"That pollution is invisible. But the insects live it. They feel it. Their biochemical structure is changed by its action."

The studies that we are carrying out will permit us to establish control measures, among which there is one of biological character under the supervision of Prof Simon Rodriguez, also from the University of the Zulia.

Polluting Agents

According to Bello, one of the polluting factors in all coal mining is the presence of sulphate, a mineral that produces a high acidification.

Nevertheless, the scientists working on this project have hopes that this effect may be reduced. Studies performed here have revealed that the waters of the Guasare pass through lime formations in whose chemical composition there exists an element called PH "Buffer" (quantity of hydrogen in the water).

Also participating in the work mentioned are the assistant instructor, Adaulfo Jimenez and the graduates Jose Maria Prieto, Angeles Esteves, Orlando Ferrer and Sandra Maldonado.

"If I add a specific substance to that water," explains the scientist, "the PH 'buffer' does not alter its chemical characteristics. There is no change.

"A while ago I worked an entire day to establish how much the PH varied during that period. I determined that it changed 0.4

"That indicates that if it is subjected to a high chemical concentration it may go unchanged. It may not be affected.

"This is very important for our objective, for it may be that pollution can be avoided through natural processes."

Iron

Another polluting factor in the river waters is iron. Prof Olga Diaz developed a subproject to detect heavy metals, especially iron.

Coal, according to Bello, contains an element known as pyrite (Fe2 S) composed of iron and sulphate. Both minerals are serious pollutants.

"Every time that coal is moved to extract it, the water is exposed to pyrite. This contact causes pollution.

"It has been scientifically proved if coal can be extracted in the shortest possible time serious pollution can be avoided."

Sediment

The sediment which accompanies coal mining operations can affect the ecosystem, because it may be that it contains elements noxious to the flora and fauna in the river.

Experiments have been carried out to determine whether or not its composition is harmful to living things in the river, and also to determine how that will vary over time.

"We are also determining the dissolved organic matter in the river bed.

"It turns out that rivers depend on an external ecosystem, principally of plants. Fish eat the leaves and are in turn devoured by larger animals, and so on.

"Now then, if coal mining alters plant life, this will also change the composition of available organic matter."

"Are you taking measures to see that this will not happen?"

"We are working to find out which are the factors influencing pollution and to standardize these parameters. This is very important in the study that we are carrying out. What are we analyzing? Physical and chemical conditions, the substratum, nutrition, etc."

"What have you done to protect animal life?"

"Initially, study and understand it. Know how it is presently behaving and what its reaction will be when mining operations start, so that adequate scientific precautions can be taken beginning now to see that the process causes no harm."

The Sewers

In the final part of his explanation the scientist pointed out the problem seen in Venezuela with the studies performed in what is called the "sewers."

Bello set forth that the "sewers" are a truly drastic system for all animal life. That is, the organisms disappear completely with a rain or a strong current of water. "This problem facing us scientists when we go to study these currents is that we cannot determine the natural effect producted by them on living organisms."

9746
CSO: 5000/2158

WEST AFRICAN STATES COOPERATE TO COUNTER COASTAL POLLUTION

Abidjan FRATERNITE MATIN in French 24 Jul 81 p 3

[Article by Raphael N'Guessan]

[Text] The countries in the coastal region stretching from Mauritania to Namibia must now implement methods to confront the omnipresent phenomenon of marine pollution and the need to assure the protection and development of the marine environment and the coastal zones of this sub-region.

A program of priority activities which should enable these countries to combine their efforts and to take concrete actions, beginning now, to combat pollution and to safeguard the quality of the marine environment and the coastal zone has just been drawn up. This program of priority activities for the biennial period 1982-1983 was, of course, derived from the plan of action drafted and approved several months ago at Abidjan by the Plenipotentiary Council on Cooperation in the Protection and Development of the Marien Environment and the Coastal Zones of the western and central regions of Africa.

Thus, during the period involved (1982-1983), national or cooperative efforts and initiatives by the countries will primarily involve combatting coastal erosion, continued surveillance of pollutants in the ocean and in coastal zones, and establishment of national emergency intervention plans. And, as support measures the program recommends intensified efforts in training and in reinforcing legislation affecting the fight against pollution and the protection of the sea and of coastal zones.

These are the basic results of the first meeting of the Steering Committee for the Marine Environment held in Abidjan which opened at the beginning of the week and ended on Wednesday.

Contrary to the information we first received, five countries (Ivory Coast, the Congo, Ghana, Nigeria, Senegal) out of the seven comprising the Steering Committee participated in the first meeting. Only Gabon and Angola were not represented.

At the end of the 3-day (20-22 July) meeting, the Committee formulated and adopted a 6-page report including the observations and recommendations arising from the discussion of the various questions on the agenda, which basically involved examination of the decisions made 4 months earlier by the Abidjan council; and the identification of priority areas in which projects should be established for the next 2 years under the program plan.

Upon examining this final document it appears that at present only 12 out of the 20 or so coastal or island countries in the region involved have signed the agreement and the treaty committing them to combine their efforts to combat pollution and to assure the protection and development of marine and coastal environments. The representatives to the Committee agreed to disregard the deadlines initially established for the signing of these documents and to further recommend dispatching a "high level mission" to certain countries to discuss with them the possibility and the opportunity of "adhering to the agreement and ratifying it without delay." It must be noted that on this point the committee members demonstrated their flexibility by excluding from their report any restrictive measure which might block participation in the agreement and the treaty by any country in the region. It was, moreover, this concern which supported Angola's continued participation on the Steering Committee. According to the by-laws of the Abidjan Council, Angola, since it has not yet signed the agreements, should be excluded from the Steering Committee, while remaining free, however, to join the group of countries who have signed according to its needs or interests.

It seems, according to the UNEP secretariat, that the delays and the hesitation on the part of the countries in coming to a decision are due more to the economic situation.

It is therefore highly significant that the members of the Steering Committee have not found it necessary to linger over questions of principle. Also, they have demonstrated that they are more concerned with the particularly important issue of the request for their participation in proposing to the countries some priority actions which could be undertaken in 1982-1983 under the program plan.

Basically, the projects selected originate from one of the four major orientations of the aforementioned plan: environmental management. The Steering Committee's choice for the inauguration of the plan is particularly judicious as it is now essential to consider the environment in order to "achieve a continued, efficient and balanced socioeconomic development for the well-being of man." With this in mind, it is a matter of "integrating all the components of the environment and all suitable methods in order to approach zero-level pollution and to promote the development of the biological resources of the marine environment and the adjacent coastal zones."

In identifying the Plan's priorities, the delegates have not lost sight of the fact that rational management of the environment is achieved through "continuous surveillance of the environment and protection of the eco-systems," all of this assuming the existence of organizations for training, coordination and for intervention in case of an emergency.

These are the major concerns which gave direction to the proposals brought forth at the first meeting of the Steering Committee for the Marine Environment. As our minister of the environment, Mr Antoine Brou Tanoh, stressed on Wednesday in closing the work sessions, these project proposals will finally enable initiation of "the first concrete actions" of the plan.

There is not a shadow of a doubt, as the Minister indicated, that the efforts deployed to reach the current stage "will be appreciated at their true value by our respective governments" and supported by them in the field.

9693
CSO: 5000/5046

GRADUAL DISAPPEARANCE OF LUANDA BAY CREATES HEALTH DANGERS

Luanda JORNAL DE ANGOLA in Portuguese 23 Jul 81 p 4

[Article by Pedro de Almeida]

[Excerpts] Residents of Luanda or anyone visiting this lovely Angolan city can, with little effort, observe a phenomenon that, occurring before their very eyes, makes them ask themselves why such a situation exists. What situation? The Bay of Luanda is emptying. It is losing water. It must be saved. It is necessary to halt its deterioration.

The logic is sound. The bay is in danger. Every citizen can see it with his own eyes, there on the seaside; it is an obvious reality, to which the sight itself is indisputable testimony. The Bay of Luanda is disappearing. Little by little, it is losing its liveliness. Its tame waters reflect its fading hydraulic force; its power is gradually waning, under the fearful and concerned eyes of the residents of Luanda.

The problem of the bay is increasing and, hence, community concern about it. Thus, "Luanda Bay, how it was born and grew, how it became sick and how it may die," was the central topic of a seminar held last weekend in the capital. The seminar, which took place in the Center for Oncological Research and Treatment, was attended by Minister of Health Mendes de Carvalho and other individuals concerned with environmental issues.

The issue at hand was explained by a group of specialists in various sectors, including geologists, biologists, civil and chemical engineers, physicians and architects, who enriched the discussion, bringing up key points of the issue as it pertained to their field of expertise.

The various speeches focused on the dangers presented by the situation which the Bay of Luanda is now experiencing, owing to such causes as silting (accumulation of debris), diminished velocity and volume of sea water, and land fill (to support the bridge which links the island to the city) and the deposits of fecal matter from the sewer system, all of which contribute greatly to environmental pollution, turning that area of our capital, which should be an attractive feature, into something repulsive.

Corimba Point is the name given the bar between the Ilha de Luanda and the sand beach known as the Peninsula das Palmeirinhas. It was by way of Corimba that ships from the south entered the Port of Luanda, particularly ships from Brazil which called at the port.

With time, the bar silted up, preventing passage of deep-draft ships. In modern times, with construction of the bridge which linked the mainland to the island and closed the Port of Luanda to entry from the south, the Corimba bar has lost the importance it once had.

The Bay's Sickness and How It Could Die

As can be deduced, the silting of the Corimba bar and construction of the island bridge have worked together to change the morphology of the Bay of Luanda. Construction of the earthworks (island bridge) was pursuant to a municipal resolution (Luanda Municipal Chamber) in the early 1960's to facilitate the flow of city residents and visitors to the island. As can be seen, in 1963-64, an immediate problem was resolved with longer range negative consequences.

When the bridge was built, the bay received less water; its volume was diminished. As time passed, the bay became increasingly calm and the water level dropped considerably. The land fill prevented the water from circulating freely, not only driving away marine life (fish and shellfish) but further the heavy silting of the bay in recent years. It is noted that most of the mains of the city's sewer system empty into the bay.

The sanitation system consists of a single sewer network, which collects residential and industrial waste water as well as rain water. The city's sewers are old; they were probably built 40 years ago. Because of their age, the mains have often clogged, obstructing the passage of waste water, causing cave-ins in several city streets under which the sewers were laid.

In addition to being old, the sewers have suffered abuse in recent years, receiving material which does not circulate easily and is hard to purify, such as solid waste formed by broken dishes, tableware, cans, animal remains, food waste, etc., which moves toward the open waters of our bay without first passing through decantation or sedimentation basins. (There are none.)

The open sea is capable of purifying polluted water containing biodegradable organic matter from the sewers. In the purification process, the above-mentioned materials become an nondegradable product that is deposited on the seabed. Meanwhile, as the Luanda sewers are overloaded, carrying massive amounts of matter, it is becoming extremely difficult for the still waters of our bay to carry out the natural purification process, resulting in the defilement of the mainland and island coasts, with bacterial pollution and contamination of fish and shellfish by pathogenic microorganisms.

Preliminary studies based on bacteriological analysis of the bay waters have revealed an abundance of pathogenic bacteria, such as Escherichia Coli, Clostridium, Trichomonas, Proteus, Salmonella and coagulase-positive Staphylococcus. The abundance of these microorganisms constitutes a latent health problem for the population of Luanda.

Because the environment is favorable, the Bay of Luanda is very rich in mollusks, particularly the "mabanga." This marine specie lives buried in the mud and obtains its food by filtering the water. Both the organism and the shell protecting it are capable of retaining a whole range of microorganisms that are pathogenic to humans.

In recent bacteriological examinations, mabangas taken from the bay were found to have the bacteria Proteus (which causes diarrhea and urinary infections), Escherichia Coli (which causes infections in the digestive and urinary tracts), and pathogenic coagulas-positive Staphylococcus (responsible for a wide variety of acute infections, specifically skin infections).

The mabanga also exhibited a high concentration of Salmonella, the bacterium responsible for intestinal fevers, specifically typhoid fever, which has been reported frequently in the city of Luanda.

As can be seen, the Bay of Luanda must be saved. In its present condition it is a well of disease. It makes the residents of Luanda more vulnerable to illness. It is necessary to safeguard the integrity of the bay to prevent its deterioration, and must be done immediately.

To save the bay and to solve the glaring problems of public health and hygiene, "let us blow up the bridge and let the waters of our bay circulate freely," as an urban planner in our capital recently recommended.

We will take up this topic again.

6362
CSO: 5000/5044

DAMAGE, DEATHS REPORTED IN NATURAL DISASTERS

Malumfashi Flood

Kaduna NEW NIGERIAN in English 5 Aug 81 p 15

[Article by Aliyu Modibbo]

[Text] THREE people have been confirmed killed and property worth millions of Naira destroyed in the recent flood disaster that swept away the 8 million Naira Malumfashi Dam in Kaduna State.

This was contained in the report of the special committee of the state House of Assembly submitted yesterday by the chairman of the committee, Alhaji Du Barde.

Alhaji Barde described the flood disaster as the first incident of such magnitude Malumfashi had ever experienced. He appealed to the state government to immediately send relief materials to the victims of the flood.

Alhaji Du Barde said his committee investigation revealed that the dam was badly constructed.

Alhaji Sani Malumfashi appealed to the state government to provide houses to the victims. He said the victims were now exposed in open air.

Alhaji Yusi Tela thanked the committee for its work and reminded the House of the same disaster at Soba. He said life had become unbearable to the victims of Soba flood and appealed to the state government to aid the victims of both Malumfashi and Soba disasters.

In his own contribution, Alhaji Ali Mai Changi drew the attention of state government on the importance of the water engineers. He said the government should send water engineers to survey the areas and make recommendations to the state government.

The House unanimously adopted the resolution calling on the state government to send relief materials immediately to the victims of the flood disaster.

Flood, Drought Relief

Kaduna NEW NIGERIAN in English 5 Aug 81 p 15

[Text] The Federal Government spent about 20 million Naira on relief materials for victims of various natural disasters which occurred in Nigeria within the past one year.

The Presidential Adviser on Parastatals, who is also in charge of the National Emergency Relief Agency (NERA), Dr. O. Olaifa, told this to the News Agency of Nigeria (NAN).

He said that the amount included 3 million Naira given to Oyo State following the Ogunpa flood disaster last year, and 2.7 million Naira given to Rivers State as a result of the oil blow-out, as well as 3 million Naira to the Bauchi State drought victims.

CSO: 5000/5053

BRIEFS

AFFORESTATION IN KADUNA--The Kaduna State Government is to spend one million Naira for an afforestation campaign this year, Governor Alhaji Abba Musa Rimi has announced. Speaking at the launching of this year's tree planting campaign in Daura, Alhaji Abba Rimi said that the amount was part of the 2.6 million Naira voted for forestry services in the state this year. [Text] [Kaduna NEW NIGERIAN in English 7 Aug 81 p 9]

CSO: 5000/5053

WARDEN WARNS OF DDT CONTAMINATION

Salisbury THE HERALD in English 25 Aug 81 p 9

[Text] Zimbabweans appear to have the highest average human levels of DDT in the world and the contamination of the environment could make as many as 20 bird species extinct in the next 15 years, Mr Ron Thomson, said last week.

Speaking to the Tsatsi Farmers' Association north of Concession on Friday he also warned of the danger to fish and one of their major sources of food, zooplankton. Mr Thomson is a provincial warden with National Parks and Wildlife.

The average levels of DDT and its derivatives in the fat of Zimbabweans and in mothers' milk was the highest recorded in the world with the exception, for milk, of a small community in Guatemala.

Higher levels had been recorded among people working with DDT in factories for many years but, among the general population, Zimbabwe appeared to be a worldbeater.

A 1979 report by the World Health Organisation revealed just four cases, throughout the world, of people with more than 20 mg per kg in their fat.

Figures

Mr Thomson said he had recently been told by the Government analyst that average levels in Zimbabwe ranged between 10 mg and 70 mg per kg with one or two figures over the 500 mg mark; but these, the analyst thought, might be the result of mistakes in the laboratory.

Doubt had also been expressed on the average figures, said Mr Thomson because the samples came from a mortuary where DDT was used to spray flies.

But, he added, absorption was minimal through the skin of a living person and would be even less in a corpse, he had been told by doctors. About 90 percent of all the DDT in a person's fat came through his food.

DDT was a very safe poison to handle. It could, and had been eaten by the teaspoonful, very little was absorbed through the skin and the particles were large enough to be filtered before reaching the lungs.

More than 90 percent of all the insecticide taken into the body was excreted.

Reserves

The problem came, he said, when fat reserves were used and DDT and its derivatives entered the bloodstream. Heavy loss of fat could take place when a person had a disease such as malaria or hepatitis.

"The WHO report did not consider this at all and I have written to them pointing it out. But, to be fair to them, the levels in the rest of the world are probably so low that they decided the problem wasn't important," he said.

Average levels of DDT contamination in mothers' milk, taken from hospital pools, were almost as high in Zimbabwe as the highest individual level recorded anywhere else in the world. The highest Zimbabwean figure was a world record.

Besides being a nerve poison when in the bloodstream, DDT could also cause hormonal problems. It was hormonal imbalance which caused birds of prey to lay thin-shelled eggs when heavily contaminated, said Mr Thomson.

Birds of prey, especially those which ate other birds or fish, were the most severely affected and would form the bulk of the 15 to 20 species which would become extinct within 15 years unless DDT levels in the environment dropped drastically.

DDT rapidly decomposed to DDE and DDD, he said. DDE had a half life, the time taken for half the mass to break down into harmless products, of about 25 years and DDD lasted much longer.

Zooplanktons, an essential carbon-fixing organism which fish relied on as a source of food, died when contaminated with very low levels of DDT. The insecticide was also more effective on fish than more common fish poisons.

Fish and birds could store many times the lethal dose in the fat reserves without any problem. But when fat was used, such as during months of poor food supply, the DDT became free and could kill.

Dying fish had been seen near Spurwing Island on Lake Kariba. "This might be a result of DDT," said Mr Thomson, "but there is no proof. We also know the tiger fish population of Lake Kariba is declining. We don't know why [illegible] DDT could be a factor."

Baby fish, just hatched, were at high risk. For the first few days of their lives they were sustained by a yolk sack which amounted to up to 50 percent of their birth mass and so could receive relatively high doses of DDT very quickly.

Services

Zimbabwe used about 1 000 tonnes of DDT a year, said Mr Thomson: 300 tonnes for agriculture, 300 for anti-malaria health services, and 400 tonnes in tsetse control.

Agricultural use could be eliminated and other uses curtailed, he suggested.

DDT was used to spray the inside walls of houses and huts to kill mosquitoes. Huts had to be sprayed just once every two years with DDT: the alternatives would mean spraying every six months.

"This would mean four times as many staff and vehicles and the rest of the infrastructure, quadrupling the cost of control. The actual cost of the insecticide isn't a major factor," said Mr Thomson.

"I don't want to be responsible for the death of anyone from malaria," he added, "but I hope that it will be possible to use alternative control methods.

"For its own reasons the Ministry of Health is thinking about spraying DDT and a substitute alternately because it doesn't want any build-up of DDT-resistant mosquitoes."

'Banning Will Hit Peasants'

The peasant sector might find the cost of alternatives to DDT too costly, the chairman of the Natural Resources Board, Mr Lance Smith, warned yesterday.

Mr Smith was commenting yesterday at the Salisbury Agricultural Show on a call by the Salisbury branch of the Commercial Framers' Union to ban DDT for agricultural use.

"I am glad to hear the commercial farmers are able to discontinue use but you must remember the communal sector as well and here we take advice from the responsible agency, Devag.

"These farmers operate on much smaller margins than their commercial counterparts and the matter has to be looked at very carefully.

"But, as I have said before, I hope we will be able to almost ban DDT within three or four years."

CSO: 5000/5054

BRIEFS

DDT BAN BACKED--The Salisbury branch of the Commercial Farmers' Union wants DDT immediately banned for all agricultural uses in Zimbabwe. Announcing this yesterday at a meeting of the Tsatsi Farmers' Association north of Concession, the association chairman, Mr David Neild, said: "We would like to see DDT banned with immediate effect. The general public seem to believe we want to keep DDT because it is cheap and effective, but we are only too keen to get rid of it." The resolution from the branch meeting will now go forward to a full meeting of the CFU executive. Two months ago the Tsatsi Farmers' Association put forward a resolution, said Mr Neild, asking for the resignation of the chairman of the Natural Resources Board, Mr Lance Smith, because he was "supporting DDT". The association was told Mr Smith would like to put his case personally either at a meeting or to Mr Neild and some members of his executive committee. "We offered him today and also told him it was our intention to invite Mr Ron Thomson so we could hear both sides of the story. We were told he had a previous engagement," said Mr Neild. [Text] [Salisbury THE HERALD in English 22 Aug 81 p 1]

RURAL WATER--Bulawayo--Eighteen more village water supplies and one pipe scheme are to be established in Matabeleland, the Provincial Water Engineer, Mr J. B. Murton said yesterday. He said five drilling teams were out in the province repairing boreholes. Four of the teams were in Matabeleland North, one each at Tjolotjo, Gwai, Nkosikazi and Nkai. The fifth was in the Beitbridge-Shashi area. Mr Murton said he could not specify the number of boreholes that needed to be repaired in the province because some of them were repaired by district councils, and the ministry was only called in to undertake major repairs that the councils could not manage. [Text] [Salisbury THE HERALD in English 20 Aug 81 p 11]

CSO: 5000/5052

USSR

ECOLOGY PROBLEMS IN PAVLODAR-EKIBASTUZ TPK DEVELOPMENT REVIEWED

Alma Ata VESTNIK AKADEMII NAUK KAZAKHSKOY SSR in Russian No 6 Jun 81 pp 60-64

[Article by Ye. V. Gvozdev, academician of the KaSSR Academy of Sciences: "Environmental Protection Problems Because of Development of Ekibastuz Power Engineering Complex*"]

[Text] Modern scientific and technical progress, while guaranteeing the economic development of society, at the same time makes it more difficult to maintain nature in its natural wealth. We are witnessing how fast pollution is rising in the atmosphere and individual reservoirs, the soil cover is breaking down, the population of wild animals, birds, reptiles, fish and other animals is declining, the vegetation is becoming sparser, and the ecological systems and individual biocenoses are disrupted. Numbers are cited more often on the reduction in reserves of mineral raw materials which play the main role in further scientific and technical progress.

But it is also known that the existence of man, like of all animals inhabiting our planet , is guaranteed by definite conditions formed for millions of years which promote the normal course of physiological processes and constant interaction between man and animals and the environment. Therefore even slight deviations in the condition of natural conditions should be taken into consideration so that measures can be taken in time to restore the grossly disrupted natural systems and protect the environment.

Questions of environmental protection and efficient use of its resources are not raised more widely anywhere than in our country. They have been the focus of attention of the Soviet state since the first days of its existence. V. I. Lenin took all measures so that by placing natural resources at the service of the people, they would be used prudently, on a strict scientific base.

The new USSR Constitution has proclaimed that in the interests of the present and future generations, the USSR is taken measures for the protection and scientifically substantiated, efficient use of the earth, its resources, water resources, plant and animal world. Actions thought out in advance and thoroughly planned, especially under conditions of a socialist society, multiply the resources of the earth, normalize the environment, beautify and enrich the landscapes, and immortalize for the progeny all that is excellent and the riches of nature.

---

[*] Abbreviated text of a report given on 25 November 1980 in Pavlodar at the republic scientific and practical conference "Problems of Forming the Pavlodar-Ekibastuz Territorial Production Complex."

The decisions of the 25th CPSU Congress defined as one of the tasks of the 10th Five-Year Plan a precise program of work for the further normalization of the environment, in particular, development and implementation of measures using the latest scientific and technical resources for the use of natural resources, monitoring the condition of the environment and the sources of its pollution, and reduction in the adverse effect of wastes on the environment. "We can use nature in different ways," stated L. I. Brezhnev from the tribune of the 25th CPSU Congress, "We can, and the history of mankind knows many examples of this, leave behind barren spaces hostile to man. But we can, and need, comrades, to improve nature, to help nature to reveal its vital forces more completely." We must start from here in solving problems associated with development of natural resources.

The creation of the largest fuel and energy complex based on the development of the Ekibastuz and Maykyubenskiy lignite fields is associated with the resolution of a number of complicated scientific and technical questions that refer to the examined problem. Stripping operations disrupt considerable areas occupied either by natural communities, or sown with agricultural crops: accumulations of unusable rock, dumps and waste piles are formed. It is the primary task of the production engineers to stipulate in advance in the drafts and plans the necessary recultivation of the dumps and disrupted land. It is the business of the scientists, the botanists and soil scientists, hydrogeologists, geologists and miners to formulate recommendations for the most applicable, efficient and inexpensive recultivation of the disrupted territories. A lot has already been done in this respect. The institutes of soil science and botanics of the KaSSR Academy of Sciences, for example, are working on the problem of using dumps for planting bushes and trees. Scientific research in this direction needs to be expanded even further so that the achievements of science are introduced more rapidly and efficiently into the practice of environmental protection in the areas of the greatest influence of anthropogenic factors on it. More decisive measures are also required from the production engineers. The already formulated recommendations must be employed more extensively and rapidly.

An important factor in the efficient use of open pit territories is also preliminary removal of the fertile soil layer with its subsequent use in the recultivation of these lands.

From the position of the protection and efficient use of natural reserves, it is important to take into consideration the comprehensive use of mineral-raw material resources of the Ekibastuz coal basin. Many scientific research and planning institutes are working on these questions. The developments which have already been made convincingly confirm the basic possibility of industrial processing of the rocks of the inner strip pit, enrichment tailings, and the ash from burning the Ekibastuz high-ash coals.

Studies of the NIITsement [State All-Union Scientific Research Institute of the Cement Industry], VNIISTROM [All-Union Scientific Research Institute of Building Materials and Structural Parts], GIPROTSEMENT [All-Union State Planning and Scientific Research Institute of the Cement Industry] and other institutions have proved the possibility of using the ash obtained from burning coals in the Ekibastuz GRES, as a mineral additive in cement production, and as a filler in making silica brick and light heat-resistant concrete. This ash, as shown by the studies of the Institute of Metallurgy and Enrichment of the KaSSR Academy of

Sciences, can be, and evidently, even needs to be used to produce alumina, and this means, also aluminum and certain rare metals, for example gallium and vanadium. The work of the Institute of Fuel Minerals of the Ural NIICHERMET [Scientific Research Institute of Ferrous Metallurgy] has established the possibility of producing from rock of inner strip pits a silicon-aluminum alloy which can be used as a deoxidizing agent in the production of steels.

Production tests at the Cherepovetsk metallurgical plant demonstrated that deoxidizing by silico-aluminum produces steels in accordance with the GOST requirements, and even has a number of advantages as compared to deoxidizing by aluminum and ferrosilicon.

The Institute of Metallurgy and Enrichment of the KaSSR Academy of Sciences has successfully done work to produce metal aluminum from the Ekibastuz coal ash.

Currently over 60 institutes and planning organizations are working on the problem of using the mineral part of Ekibastuz coals. A number of studies have covered the production of gallium, energy-accumulating substances, highly effective coagulants for production of construction ceramics, light heat-resistant concrete, ash gravel, porous fillers and other materials for construction purposes. Despite the considerable work on the complex use of the components of the Ekibastuz coal fields, this problem is the cause of serious concern since the plans provide for construction of enterprises to use only a slight part of the inner strip pit rock, ash and slags. At the same time, the calculations show that when the rated output is reached, 11.3 million tons of country rock will be removed each year, and during the combustion of coals at the planned Ekibastuz GRES, 30-35 million T of ash will be dumped. Therefore the output of the planned enterprises for processing the stripped rocks and ash must be designed for their complete use in the future, otherwise it will be difficult to solve the questions of environmental protection.

The Ekibastuz coal fields are being worked by open-pit method with a drastic change in the natural environment in the extraction regions where the open pits alone comprise an area of about 17,000 ha. The territories adjacent to the open pits will undoubtedly be polluted with dust and gases of the mining enteprises, and the hydrogeological regime and sanitary-hygienic conditions of the locality will be disrupted. It is the immediate task of the scientists to conduct definite studies, to foresee the negative consequences of these changes in nature, and to be able to prevent them.

Protection of the air basin from pollution, i.e., the atmospheric air, plays an important role. The greatest attention is currently focused on this question. It is enough to quote the recently adopted law on protection of the atmospheric air. For the first time, requirements are being stipulated for establishment of standards of maximum permissible emissions of pollutants into the atmosphere. This, of course, will increase the responsibility of the leaders of the enterprises for maintenance of air purity.

Because of the rapid development of Ekibastuz, the outputs of the existing TETs are rising intensively. However, by the conclusion of the oblast sanitary and epidemiological station (SES), the increase in TETs output is being done without the radical solution of the question of protecting the atmospheric air. The KaSSR

Ministry of Power and Electrification and the planning institute "VNIPIEnergoprom" have not paid attention to the requirement of the Pavlodar oblast SES regarding the need to reconstruct the existing low-efficiency ash-traps, electrical filter units, increasing the height of the smokestack corresponding to the calculations for scattering emissions, and other measures. This situation, of course, cannot help but cause concern for the future of the air basin in Ekibastuz.

Taking into consideration the switch to bulk recovery of the Ekibastuz field, the Ekibastuz GRES's are designed to burn coal with ash content to 55%. Correspondingly, at the same time the combustion of sulfer is increased and about 200 T/h of sulfur dioxide will enter the air. Methods of trapping the nitric oxides have not yet been developed and the possibility of suppressing their formation during coal combustion is also not yet clear. In this respect there is food for thought for the chemists and planning organizations. Drastic decrease in the formation of emissions of nitric acids and sulfur into the atmosphere is a task obviously not only and not so much for the production engineers, as for the scientists.

Start-up of the new power engineering facilities makes it necessary to protect the environment from thermal pollution. Experience has shown that exceeding by 8-10°C of the temperatures in the GRES cooling reservoirs versus the maximum natural temperature entails a steady disruption in the biological processes and results not in self-purification, but in self-pollution of the water systems. Algae generally develops in these reservoirs, so-called efflorescence of the water is noted. It inflicts great economic damage, causing overconsumption of electricity. Other biological disorders also develop which affect the natural life of the reservoir.

The Institute of Zoology of the KaSSR Academy of Sciences for the first time in Kazakhstan began hydrobiological studies on the cooling reservoirs in order to clarify the effect of thermal pollution on hydrobiocenoses and to formulate recommendations to eliminate the biological interferences with the use of these reservoirs. Jointly with the Institute of Power Engineering of the USSR Ministry of Power and Electrification, studies have been underway since 1977 on the direct-flow cooling reservoir of the Yermak GRES. It was established that despite the considerable path that the warm water travels on the canal to the channel before discharging into the main bed of the Irtysh (near Pavlodar) it was not completely cooled. It was found that under conditions of a summer with normal temperature regime, no major disorders occur in the hydrobiological regime of the channel, but under conditions of a hot, extreme summer, the water temperature in the channel can reach 36.5°C which has an immediate effect on the biocenoses and results in disappearance of some and considerable reduction in the population of other useful species, in particular, the filterers who play a role in self-purification of the reservoirs.

The appropriate recommendations were issued for the Yermak GRES cooler in time for improvement of the water cooling system and improvement in the biological regime of the cooling reservoir. They must be taken into consideration by the designers.

In the summer of 1979, similar studies were made on the closed-type cooling reservoir of the Ekibastuz GRES-1. In order to control "water efflorescence," the Institute of Zoology of the KaSSR Academy of Sciences recommended using a biological method, raising in this reservoir of certain plant-eating fish, in particular, the white Hypophthalmichthys and representatives of the Indian fauna buffalo fish. These fish species are capable of significantly suppressing the development of algae and survive the conditions of the cooler fairly well. The available food reserves of the lake can guarantee the formation of a commercial school of these fish. Their food value is higher than of local forms. Its is also important not to stop studies to search for the best methods of controlling the thermal pollution of our reservoirs, the more so because their use for fishing purposes will yield a considerable economic effect in the future.

Vegetation plays an enormous role in cleaning the atmospheric air. Our forests and green landscaping are the main suppliers of oxygen to the atmosphere. Therefore, landscaping of cities, workers settlements and industrial facilities is of primary importance. We should be concerned about this even now, especially taking into consideration the rates of construction of all the links in the Ekibastuz-Pavlodar power engineering complex.

The creation of protected forest zones, natural parks, in particular, the Bayanaul national park, preserves and sanctuaries acquires great importance in the Pavlodarskaya Oblast. Our task is to preserve for our progeny and for scientific purposes the standards of natural biocenoses. Study of individual ecosystems now will permit a better prediction, and this means, prevention of those negative changes that could occur on the earth under the influence of anthropogenic factors.

The scale of development of the Ekibastuz power engineering complex raises difficult, but at the same time quite resolvable tasks in controlling pollution of the environment, disorder in the ecological equilibrium in the region, and deterioration of the sanitary-hygienic conditions. One should only predict in advance the negative consequences and rapidly work out countermeasures capable of drastically reducing the consequences of the negative effect on the environment. Unity of science and practice must play the primary role here.

The most significant shortcoming in the use of nature is the branch, narrow-departmental approach to solving a number of the most important questions, including those referring to the Ekibastuz power engineering complex. Questions of the efficient use of the fuel-energy, raw material, water, land and other natural resources are interbranch problems. Therefore environmental protection in the zone of the Ekibastuz coal field with the adjacent territories and industrial centers should be classified as a problem of complex territorial planning, of environmental protection measures which must be coordinated by a single center, in this case, the KaSSR Gosplan, or even better, a special committee for environmental protection. It should be set up under the KaSSR Council of Ministers.

COPYRIGHT: "Vestnik Akademii nauk Kazakhskoy SSR", 1981

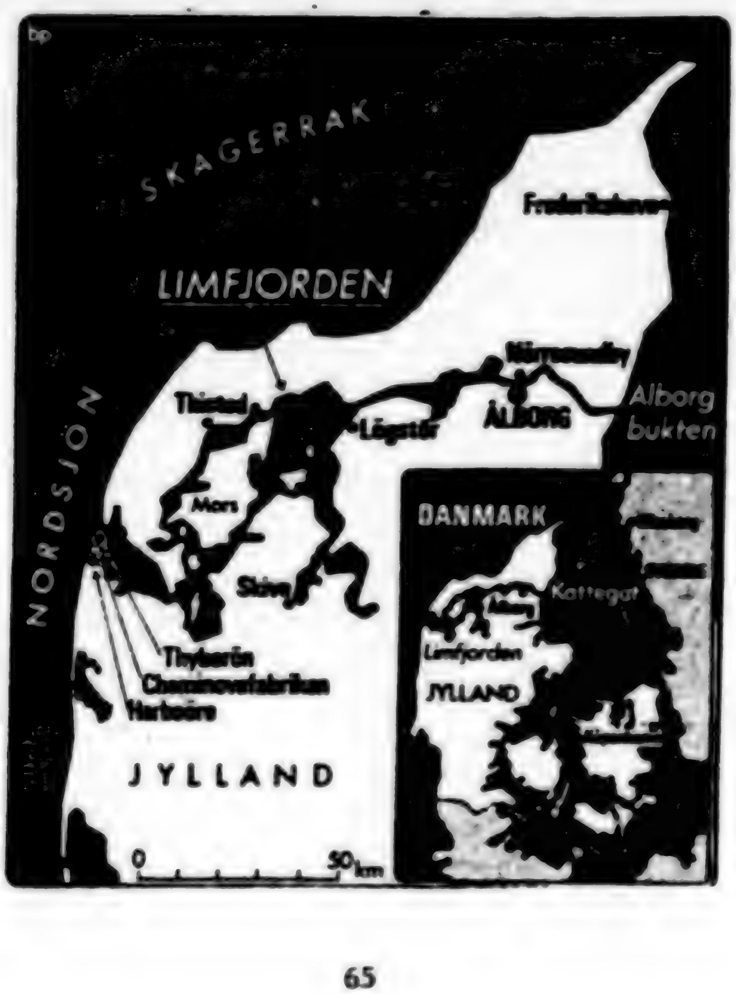
9035
CSO: 1800/819

FJORD THREATENED AS SALT STORAGE EMPTIED FOR GAS RESERVES

Stockholm DAGENS NYHETER in Swedish 27 Jul 81 p 7

/Article by Bo Engzell/

/Text/ At least 50,000 tons of waste with large concentrations of dangerous nerve poisons, phenols and organic mercury from the scandal-ridden Cheminova Manufacturing Plant is threatening the famous Limfjord in Denmark. Biologists and industrial fishermen fear a catastrophe. The entire fjord's lobster population is already dead and the shrimp are gone too. Many oysters and large eel are also dying.



So far the largest scandal involving poisons in Scandinavia keeps growing. Now the fjord is also threatened by large amounts of salt that must be removed from an underground storage to make room for natural gas.

Poisons from the Cheminova Plant's waste storage are slowly leaking into Limfjord. The plant is located on a point near Thyboron, where Limfjord joins the North Sea. From this point, the "fresh-water" current flows into Limfjord, which empties into Alborg and Kattegat toward Sweden. Thus, the poisonous water is distributed throughout Limfjord.

But Cheminova is not the only source of poisons. Huge quantities of cadmium from a radio and television factory have been found in another part of Limfjord, for example. There are other serious instances of pollution near Alborg.

And now natural gas is emerging as a new dangerous threat to Limfjord. The gas will be taken from Danish oil fields near Esbjerg and stored north of Viborg near Limfjord, where huge amounts of salt are now stored underground.

But first the salt must be removed to make room for the gas. Some 260 million tons of salt will be washed into Limfjord!

"Within a large area of Limfjord its famous mussels are dying and conditions will be completely changed by the enormous quantities of salt," said biologist Flemming Madsen, a member of the so-called Cheminova Group. This group is working to disclose all environmental scandals and get the authorities to take measures to save Limfjord, among other places.

Many Threats

Hence, there are many threats to the famous fjord in northern Jutland, Denmark's "Nordland" with much unemployment.

"Many industrial fishermen have already been forced to give up fishing in Limfjord because poisons have killed the fish," said Johannes Noer, Hvidbjerg. He is spokesman for the Central Association of Limfjord Fishermen.

On the beach along the North Sea, across from the point where the Cheminova Plant is located inside Limfjord and where the poisonous waste was first dumped, the clean-up has now been completed. The result was more than 23,000 barrels of poisonous sand. The barrels are no longer at the plant; they will be transported to West Germany and deposited in salt mines in Hessen.

Poisons, however, cannot be destroyed. They seeped into the North Sea and killed many fish and sea birds. Direct release of nerve poisons due to accidents at the Cheminova Plant has compounded the problem. Nerve poisons are used in the manufacture of products designed to kill harmful insects.

The Cheminova Plant employs over 500--important jobs in a hard-pressed community--and has annual sales of 350 million kronor. Some 98 percent of the plant's production is exported, making it a very important industry in Denmark today.

During the clean-up of the North Sea shore, workers had to wear completely pressurized suits. They looked like space men working on the beach. Outside the plant, the mercury content has been measured to be 7,500 times greater than normal.

"Germany now wants to repackage the 23,000 barrels of sand, which also contained mercury and DDT, for greater protection. The content will be diluted," said Flemming Madsen.

The Cheminova Plant is not alone responsible for the poisonous deposits along the beach. The Danish government has been involved too. These poisons were dumped before the new environmental law came into being and before we really understood the danger of dumping poisons along the seashore. Today the area is sealed off with barbed wire. Although the poisons have been removed, there is a ghastly stench along the shore.

Many foreign tourists are fishing close to the poisoned beach and Cheminova's waste storage in Limfjord. Signs banning fishing are in Danish only. In the summer, Jutland is inundated by West German tourists in particular. "We are completely unaware of the dangerous poisons," several of them told DAGENS NYHETER.

"It is unconscionable of the authorities to do this," according to Madsen of the Cheminova Group. "All fishing must be stopped. The fish that is left is very dangerous to eat."

The clean-up of the North Sea beach cost over 23 million kronor. Cleaning up Cheminova waste hidden in an old plant foundation or placed in leaky concrete containers will be even more expensive.

"For instance, there are high concentrations of organic mercury that are really dangerous to the human nervous system," said Madsen. "There are also other very poisonous compounds formed in the chemical process."

Livelihood

Approximately 1,000 families make their living fishing in Limfjord. There has been controversy between the large canning industries and Cheminova.

"Cheminova's huge waste storage of at least 50,000 tons of waste containing dangerous poisons must be completely cleared away. For that matter, there could be far more poisonous materials than we suspect," said Johannes Noer, the spokesman for Limfjord fishermen.

"We will demand huge amounts of compensation from Cheminova. Many fishermen have lost their jobs. The death of lobster, for instance, was a heavy blow for us. Now even oysters are dying. We shall even demand extensive fishing protection measures. Our township cannot afford to lose any more jobs."

The Cheminova Plant was formerly located in Gladsaxe near Copenhagen. It was surrounded by controversy there too.

"Authorities were well aware of how dangerous Cheminova was. For that reason, they cynically dispatched the plant to Jutland where the people could not afford to say "no" to much needed jobs," said Madsen.

"Today, some authorities are just putting up a fight," he said.

"A decision to clean up the Cheminova waste in Limfjord cannot wait until fall," stressed Flemming Madsen. "That could lead to a catastrophe, a death blow to Limfjord. That must not happen. We must also investigate the extent of damage in several other sections of the fjord. Many of us are now demanding that. We have succeeded in awakening public opinion in Denmark with respect to the environment. That is at least one positive side to this wretched Cheminova incident."

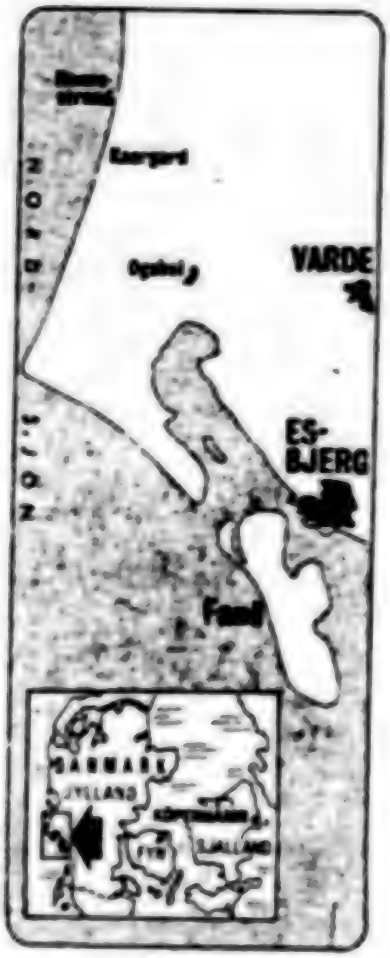
8952
CSO: 5000/2161

DUMPING OF POISONOUS MEDICINE THREATENS JUTLAND COAST

Stockholm DAGENS NYHETER in Swedish 29 Jul 81 p 30

/Article by Bo Engzell/

/Text/ The disclosure of poisons being dumped in Denmark follows closely on the heels of the big Cheminova scandal. This time it concerns an excellent bathing beach in Kargard in West Jutland north of Esbjerg, where a manufacturing plant has dumped left-over poisonous medicines, phenols, and perhaps nerve poisons. These poisons are now leaking into the sea.



"All dumpings will now be investigated. Clean-up is difficult and expensive, but still possible. More and more people and now demanding it," said Flemming Madsen, one of 15 biologists at Arhus University and a member of the now famous Cheminova Group. This group is leading the struggle for a better environment and is in the process of issuing a "partisan Bible."

The Ministry of Agriculture allowed a pharmaceutical plant to dump its waste water among the beautiful protected cliffs along the North Sea shore in the period between 1966 and 1973. Before that, the plant had dumped its waste water into rivers where salmon died and the mercury content became so high that all other fishing had to be banned.

The authorities then felt it would be better to dump the waste water near the seashore. Oksbols county, where Kargard is located, was not consulted. Some 300 to 400 liters of waste water were transported by tanker to the cliffs and dumped there. This water contained poisons from the manufacture of sleeping pills and nerve medicine.

Dumping Among Cliffs

Later it turned out that a chemical plant had also dumped its waste among the cliffs without permission to do so. It is believed that this dumping concerned waste from the production of insecticides and phenols that may cause cancer and allergies.

Through the ground water these poisons are now carried into the North Sea.

There is an enormous stench along a large section of the shore. Even at a considerable distance from the dumping site, there is a nauseous, brownish yellow, foamy and thick sludge along the shore.

This is water polluted by the poisonous materials that were dumped here. Some distance from the dumping site, West German tourists are bathing; they cannot read the sign written in Danish warning against bathing here. The sign is posted next to the dumping site.

German Sport Fishermen

Germans also engage in sport fishing along the shore. You see children on floating mattresses bobbing up and down along the shore. There are many vacationing families in this area. These tourists stay at a nearby resort hotel, live in camps or a few rented cabins.

When DAGENS NYHETER visited the area, only a few persons along the entire beach knew anything about the poisons dumped here among the cliffs.

"The Danish Environmental Board has decided to investigate the area where the waste was dumped," said Oksbols' mayor Harry Thomsen. "The pharmaceutical plant has permission to dump there. However, it comes as a surprise that the chemical plant has also used this area as a dumping ground."

Many people in Denmark are now demanding a better environment. They want to know where poisons were dumped before the new environmental law came into being. The government has also promised an investigation, not only of the Cheminova Plant's huge waste deposits that threaten all of the famous Limfjord, but of the Kargard case too. Demands for cleaning up the environment are growing stronger all the time. The action of the young biologists in the Cheminova Group is paving the way for greater environmental awareness.

Fishermen Struggled

"The environmental law will be revised. The Cheminova disclosure will make the law more stringent," believes Dorte Schmidt, a member of the Cheminova Group.

Many Limfjord fishermen struggled alone to no avail against the powerful Cheminova Plant and the authorities. Poisons from the plant with its dangerous waste deposits of at least 50,000 tons killed the fjord's lobster and fishermen lost their most important source of income. Large quantities of eel also died; oysters are dying and the shrimp has disappeared.

"Fishermen themselves were not able to effectively plead their just case. Poisons from the plant destroyed fishing, which is the livelihood of many families in North Jutland where jobs are few," said Flemming Madsen of the Cheminova Group.

He was one of the original 17 young biology students at Arhus University who a couple of years ago decided to form the so-called Cheminova Group. Arhus University now owns the poisonous plant.

The plant was donated to the university. Cheminova employs more than 500. It primarily manufactures insecticides that contain nerve poisons. It is this type of waste, among other things, that can be found in the huge waste deposits that threaten Limfjord. Cheminova has annual sales of 350 million kronor. The plant exports almost all of its production and is thus important to Denmark.

"Fishermen saw how sea birds and fish died en masse from these poisons. Laboratories also confirmed death by poison, but the authorities did not want to listen," said Madsen.

The Cheminova Group attracted lawyers and chemists at the university. The poisonous waste has been charted. After persistently trying to fight a number of cases, the government finally decided that the poisonous depot in the vicinity of the North Sea and the Cheminova Plant had to be cleaned up. That cost almost 25 million kronor. Some 23,000 barrels were filled with dangerous poisonous sand.

Poisons cannot be destroyed so the sand will be placed underground in West German salt mines.

Poisons Remain

But Cheminova's far greater, more dangerous and leaking poison depots inside Limfjord still remain.

"A catastrophe is threatening the entire fjord," said Madsen. "This waste must be removed quickly."

Biologists connected with the Cheminova Group are now working hard to effect that. They are gaining support all the time.

"But we are attacked from many quarters," Madsen emphasized. "We are accused of driving foreign tourists away from Denmark as a result of our disclosures. That is wrong. Those who have been silent and wavering are partially responsible for the fact that some tourists may have decided not to return to Denmark. This would not have happened if things had been handled differently."

"Partisan Bible"

"I never dreamt I would stalwartly address these biological environment problems in the course of my studies," said Dorte Schmidt.

The Cheminova Group has spent tens of thousands of hours on the struggle for a better environment. This group has traveled throughout Denmark speaking about the importance of cooperation between man and nature. It is now working on a "partisan Bible," based on experiences in connection with the Cheminova incident.

"There is frightful destruction of the environment throughout the world. Just look at how the Germans are dumping poisons into the North Sea. The environment cannot bear any more. Together, all nations must solve the pollution problem. We in the Cheminova Group do not want to kill the Cheminova Plant. The jobs there are needed, but the manufacturing process must be made "clean." That is possible there as well as elsewhere with the right will, albeit at some cost."

8952
CSO: 5000/2161

OSLO PLANS NEW WASTE RECYCLING FACILITY

Oslo ARBEIDERBLADET in Norwegian 11 Aug 81 p 13

[Article: "Recycling of Oslo's Trash: Who Dares to Invest Half a Billion?"]

> [Text] Should Oslo invest half a billion to recycle paper, plastic and iron without knowing whether anyone will buy it? Should the municipality burn trash until it is known what can be sold and for what price? The city's bourgeois majority is willing to take the chance. The Labor Party primarily wants to wait on the recycling until profitability is more certain.

The planned facility for recovery and burning of Oslo's household trash, which is to [illegible] built at Sondre Nordstrand, will probably require an investment of about half a billion kroner. According to what ARBEIDERBLADET has learned, the firm Kvaerner Brug has offered to build Oslo a complete installation for 480 million kroner. The firm would be willing to participate in the financing and to operate the facility.

The question was on the blotter of the City Council last Wednesday, but after a recommendation from the Labor Party it was decided to postpone dealing with it. The bourgeois majority was prepared to decide the matter without delay. Only reluctantly did they agree to postpone it one week.

The Labor Party is very preoccupied with Oslo purchasing such a facility, which undoubtedly will require valuable resources. The problem of finding a new trash dump after Gronme is full was not considered. But to invest half a billion kroner without knowing more about the income side than the municipality has learned up to now is believed by the party to be worrisome.

Perhaps it is better to postpone the recycling portion (about 250 million kroner) until the paper industry has given clearer signals on how much reclaimed paper they are willing to buy and what price they are willing to pay. As the market is now, the municipality has no guarantee of making such a facility profitable. The losses can go up in the millions.

The state is said to have expressed its willingness to assume a considerable economic risk. Temporarily in the form of a loan guarantee, but later more directly by covering parts of the loan if the income is disappointing. We do not know how decisive this will be for the Oslo politicians' opposition to "selling the skin before the bear is shot."

The alternatives which stand out are: 1. The City Council asks Kvaerner Brug to deliver and operate a complete installation as soon as possible. 2. Recycling is postponed and sent out for a new round of bids when current. 3. A reduced recycling plant is delivered, in addition to a combustion plant. Kvaerner would probably guarantee this delivery without a new round of bids.

It is necessary that the municipality build a combustion facility as soon as possible. It is an important energy source for the remote heating system which will heat dwellings in this area. Remote heating systems are now constructed at the same time as dwellings. Temporarily all energy comes from electricity.

Chart on following page.

Caption: Recycling of glass and animal feed will probably be withheld from the first phase.

Key: 1. Flow diagram for a trash recycling plant
2. Coarse sorting
3. Burning
4. Pressing
5. Iron
6. Primary sorting
7. Color sorting
8. Glass
9. Sterilizing
10. Sorting vegetable/organic
11. Drying
12. Animal feed
13. Composting
14. Compost
15. Sorting plastic/paper
16. Regenerating
17. Plastic
18. Regenerating
19. Paper
20. Combustion oven
21. Processed steam
22. Remote heating

9287
CSO: 5000/2166

NITROGEN FROM FERTILIZERS SEEN THREAT TO BALTIC

Stockholm SVENSKA DAGBLADET in Swedish 15 Jul 81 p 10

[Article by Lennart Lundegardh: "Importance of nitrogen underestimated"]

> [Text] Maybe it was a mistake to totally concentrate on the treatment plants' removing phosphorus from the sewage water. At least as far as the Baltic is concerned, it looks now as if the efforts also should have been directed toward nitrogen.

"The decisions must be reconsidered," says marine biologist Ragnar Elmgren of the Zoological Institution at Stockholm University. "There exists technology abroad for the removal of nitrogen, but it is expensive."

New research discoveries at Asko Laboratory and at the Oceanographic Institution at Goteborg University together present a new picture of the pollution in the Baltic.

At the turn of the century the Baltic was a clean and relatively low producing sea. There was plenty of oxygen even at the greatest depths. Since then it has gradually deteriorated. As of the end of the sixties, the deep water, i.e. below approximately 80 meters, has been totally oxygen-free in great parts of the Baltic.

When oxygen runs out all higher life forms disappear. The sea bottom fauna dies and the fish leave. At times almost half the actual bottom area of the Baltic has been affected.

In shallower areas, however, the bottom fauna has more than quadrupled in weight since the twenties.

This is caused by the Baltic actually having been fertilized, which has resulted in added production of plant plankton, which in turn has resulted in more food for the bottom fauna.

Gary Shaffer of the Oceanographic Institution in Goteborg has made comparing calculations of the oxygen content in the Baltic during the 20th century and concluded that changes in the water balance, for example through increased precipitation, cannot explain the present low oxygen levels.

The deterioration must be caused by increased oxygen consumption, the kind that results when oxygen is used up by the breaking down of dead organisms. This also indicates that contaminated discharges have caused the sea to become fertilized.

Man is therefore responsible for the present condition of the Baltic, and thus a more than 10-year long debate among the researchers can be concluded.

"At the same time as the low oxygen levels in the deep water area have eliminated spawning grounds for cod east of Gotland and threaten similar areas by Bornholm, much cod is now being caught in the Baltic," says Ragnar Elmgren. "It sounds contradictory, but can be explained."

"The food supply for the cod has increased dramatically. And a successful breeding year in the south Baltic has produced enough fry for the whole Baltic sea," he says.

But then, what about the nitrogen? During the last 5 years knowledge has developed both internationally and here at home, that, at least in marine coastal areas, nitrogen and not phosphorus is, what is called, the limiting factor, i.e. the substance that determines the size of the algae production.

In lakes, however, phosphorus probably plays this part.

"One cannot say that it was a mistake to remove the phosphorus from the sewage water. The damage might have been even greater today, had it not been done," says Ragnar Elmgren.

"But now the nitrogen reduction must receive high priority. We must do all we can to learn how the nitrogen content can be limited," he adds.

The contributing factors are great and difficult to control, because they are international: Polluted sewage water from the coastal regions, atmospheric precipitation, leakage from farming areas, etc.

This runs the risk of becoming an expensive proposition.

9843
CSO: 5000/2162

PRODUCT CONTROL BOARD SANCTIONS CROP-DUST TESTS

Stockholm SVENSKA DAGBLADET in Swedish 16 Jul 81 p 9

> [Text] Wooded areas in many districts will this summer be sprayed from the air with chemical weed-killers although there exists a general ban on these poisons.

The Product Control Board has granted the agricultural school an exemption from the ban for the purpose of testing some new products against undergrowth. New spraying methods are also to be tested.

The areas which will be sprayed by airplane or helicopter belong to the Domanverk and are situated within the districts of Berg and Stromsund in Jamtland, as well as within the districts of Lindesberg and Overkalix.

In addition, ground spraying of the new products will take place in the districts of Uppsala, Halmstad, Mora, and Vindeln.

Important Test

"We consider this scientific test so important that we did not hesitate in granting an exemption from the general ban," Bo Wahlstrom, departmental head at the Product Control Board of the Conservation Department, tells TT.

"It is important to test new products practically. In this case it is a question of products with low poison content, and partly it concerns new procedures, which is not the least important aspect."

The weed-killers to be rated at the test are the registered product Roundup of poison class 3, the lowest class, as well as a couple of still not registered products.

Replaces Phenoxy Acids

Roundup is already so well known that it may be sprayed from the air during the tests, while the other two products may only be used in spot treatment on the ground. Roundup may in the long run come to replace phenoxy acids.

Last spring the government extended the ban against the use of chemical weed-killers in forests until the end of June, 1982. What will happen then is uncertain, but much indicates that the ban will become permanent.

"The Product Control Board may legally grant an exemption from the ban when necessary for scientific testing of a product; this is the paragraph we have applied in this case," says Bo Wahlstrom.

"We are otherwise restrictive in granting exemptions, but found this experiment which the forestry school is conducting important."

Spraying by Saw

A partly new spraying technique will be tried at ground treatments. A method has, among other things, been developed whereby the weed-killer is used at the time of manual clearing. The product is spread via the blade of the clearing saw, thus preventing the formation of shoots, which is a difficult problem.

Fully 60 hectares of the forests belonging to the Domanverk will be sprayed from the air with the spray Roundup. The tests will begin at the end of July, to be completed no later than September 15.

Warning signs will be posted in the areas in question, and the public will also be informed through notices in the local press.

9843
CSO: 5000/2162

PLASTIC MAKERS HALT CADMIUM PRODUCTION IN ADVANCE OF BAN

Stockholm SVENSKA DAGBLADET in Swedish 31 Jul 81 p 7

[Article by Henrik Ekman: "Products already free from cadmium"]

> [Text] On 1 July next year the ban on cadmium in Swedish and imported products takes effect. But already a year in advance have the Swedish plastics makers to a great extent started manufacturing products free from cadmium.

Ingrid Jedvall of the product control board of the Conservation Department says this.

"Much has happened since the decision about the ban was made a year and a half ago. Swedish industry is now in a much better position than foreign industry."

Bertil Lundin of Sweden's Plastics Association is of the same opinion.

"Yes, the ban on cadmium will not mean any serious problems. The apprehension has quieted down. One has become used to the change."

"Certain things may be more difficult to manage," says Bertil Lundin "A suitable substitute for cadmium in stabilizers has not yet been found. The manufacturers have, however, been informed by the product control board that exemptions are to be expected."

Dye Problem

"One problem is dye," says Bertil Lundin. "How can we make sure that the imported dyes do not contain cadmium? The Customs will not assume that task. But on the other hand, maybe we can turn it into something positive: 'Buy Swedish cadmium-free dyes!'"

At the industrial welfare board, where the presence of, among other things, cadmium is analyzed continuously in control groups of people, decreasing levels of the metal have been observed. "We more and more seldom see urine and blood tests with increased levels," says Olof Vesterberg, associate professor.

One is also working intensely abroad on the substitution of nonpoisonous substances for cadmium. The criticism against Sweden's decision has disappeared.

Voluntary at First

"The Germans are investing a great deal, and Denmark is taking the same course we are," says Ingrid Jedvall. "But the Danes want to test a voluntary way first."

The ban includes cadmium as pigment, as stabilizer in plastics and for surface treatment. Accumulators and fertilizers are exempt from the ban. The content varies in fertilizers depending on the origin of the raw material, phosphorus. One manufacturer, Supra, managed from 1971 to 1978 to decrease the cadmium content in their products by 60 percent.

Cadmium can cause liver and kidney disorders.

9843
CSO: 5000/2162

BRIEFS

DIOXIN LEVEL NOT DISTURBING--The dioxin content in the phenoxy acids of type 2,4-D, which are used against underbrush and weeds in Sweden, is in no way alarming, states the Conservation Department. The product control board at the department has analyzed all presently occurring products following alarming reports from Canada last winter. Researchers had there found high levels of poisonous dioxins in 2,4-D, a phenoxy acid earlier believed to be free of such pollutants. The product control board now presents reassuring information. No trace of the most poisonous, i.e. highly chlorinated dioxins, has been found in any product. Partially chlorinated dioxins, which have a significantly lower poisonous effect, were found in extremely low doses in two products. The companies selling these have been urged to contact their manufacturers in order to investigate the reasons for the levels. Before the present ban on spraying in the forests took effect, approximately 40 tons were used there per year. Farming uses 27 and households 4 tons. In farming the most common weed-killer is instead MCPA with 1600 tons per year. Earlier the phenoxy acid 2,4 5-T was banned because it contained dioxins. [Text] [Stockholm SVENSKA DAGBLADET in Swedish 11 Jul 81 p 21]

9843
CSO: 5000/2162

END

END OF FICHE

DATE FILMED

16 Sept 1981